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Illumination Standards*

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THE problem of comfortable, healthful, and efficient functioning of the eyes is of prime importance whether one is working in the school, the home, the office, or industry. Faulty illumination frequently leads to eyestrain which is often accompanied by reflex functional disturbances of other organs. Hygienic illumination is, therefore, intimately related to visual function. Since a large amount of one's visual work is ordinarily done under artificial illumination, the recommended practice of lighting for various kinds of visual work is of concern to all.

During the last decade a lighting consciousness has been forced upon most of those who perform visual tasks and upon those who control the environments in which visual work is performed. Although interest in lighting has been stimulated by popular articles, and by reports written by educators and medical men, the more fundamental information has appeared in the experimental literature. This literature is not readily available to nor easily interpreted by most people. The tendency, therefore, is to consult pamphlets on recommended practice when lighting specifications are needed for a particular situation.

Beginning in 1915, the Illuminating Engineering Society began issuing codes on lighting. The more recent codes are known as *Recommended Practice of Home Lighting, Office Lighting, etc.* They have been prepared by the Illumination Engineering Society either alone or jointly with the American Institute of Architects usually under the rules of procedure of the American Standards Association. Although the American Psychological Association has been in existence for over 50 years, and even though applied psychologists have been interested in the field and have been making experimental contributions to the hygiene of vision for over 40 years, neither psychology nor psychologists are represented in the group specifying recommended practices. Furthermore, a large body of psychological literature has been ignored, either because the illuminating engineers were not familiar with it or because they chose not to use it. The consequence has been an emphasis upon the engineering aspects of lighting with inadequate attention to certain psychological factors. More recently there has been

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some attempt to consider more of the psychological factors. Perhaps because engineers lack a psychological background, interpretations are frequently at fault. It would seem that the most satisfactory approach to hygienic lighting might be achieved by coördinating the work of engineers, physiologists, and psychologists.

Examination of recent reports on recommended practice reveals an increased emphasis upon control of direct and reflected glare, brightness contrast, and the distribution of light. The tendency to specify relatively very intense light for many tasks is especially prominent. The purpose of this paper is to review specifications in the more recent editions of recommended practice of lighting and some of the data from which the recommendations are derived.

SPECTRAL QUALITY OF LIGHT

This, in general, receives adequate treatment in recommended practices.[27-30] It is stated that with equal foot candles of illumination, variations in color quality of light found in common illuminants have little or no effect upon the visual discrimination involved. When color is to be discriminated it should be viewed under as close an approximation of daylight as possible. Luckiesh [8] has a valuable discussion of light and color.

QUALITY OF LIGHTING

Recommendations [27-30] concerning control of glare, diffusion, direction, and distribution of light, light reflection value, and effects of finishes on ceilings and wall are ordinarily quite satisfactory. Visual discrimination is improved by moving the glare source from the line of vision and by reducing the brightness of the light source and the amount of light emitted by the light source toward the eye. Brightness of luminaires should be low in value. High brightness contrasts within the field of vision should be avoided whether on the work surface or in other parts of the visual field. Proper diffusion of light helps to eliminate undesirable shadows. For this reason, purely local lighting is unsatisfactory. Since the reflection factors of objects in the visual environment play an important rôle in illumination, the finish of ceilings, walls, floors, and furnishings is important. These surfaces should provide reflecting surfaces to help spread the light about the room. Furthermore they should be such that undesirable brightness contrast does not occur within the field of vision. Shiny or glossy finishes should be avoided to prevent specular glare.

In the recommended practices, informative discussions on classification of lighting systems are usually included. Also illustrations of fixtures and installations are sometimes given. Some attention is given to daylight illumination and the need of coördinating artificial with daylight lighting.

INTENSITY OF ILLUMINATION

Intensity of illumination receives by far the greatest emphasis in specifications. With each revision of a lighting code prepared by illuminating engineers, the foot candle recommendations rise. One may well question whether this trend has a scientific basis, or whether the consumer has been educated to accept the higher intensities. In 1934, Luckiesh and Moss [9] presented general recommendations which they considered to be very conservative. These are repeated with slight changes in Luckiesh's recent book.[8] He adds that these are inadequate in many cases where hundreds and even thousands of foot candles are desirable. Examination of recommended practices of lighting reveals that, for the most part, they are based upon researches done and interpretations made by Luckiesh and his coworkers, or on researches inspired by

them. Let us turn first, therefore, to these reports.

In the *New Science of Seeing*, Luckiesh and Moss,[9] and in *Light, Vision and Seeing*, Luckiesh [8] make the following foot candle recommendations for common tasks of the work-world:

1. 100 foot candles or more are specified for severe and prolonged visual work. Examples include fine needle work, pen work, engraving and assembly, and discrimination of fine details involving low contrast.
2. 50 to 100 foot candles should be used for proof-reading, difficult reading, watch repairing, and average sewing.
3. 20 to 50 foot candles are listed for such visual tasks as clerical work, ordinary reading, and average sewing on light goods.
4. 10 to 20 foot candles are proposed for ordinary reading and sewing on light goods when the task is not prolonged.
5. 5 to 10 foot candles are needed for visual work which is more or less interrupted or casual.
6. 1 to 5 foot candles are sufficient for perceiving large objects.

Luckiesh [8] states that these are minimum foot candle recommendations and that he considers them to be very conservative from the viewpoint of ease of seeing. Furthermore these foot candles, according to Luckiesh and Moss,[9] are far below the intensities of illumination which new knowledge indicates to be ideal.

These recommendations are derived from various sets of data which will be discussed in turn.

Preferences for light intensity—Luckiesh and Moss [9] cite data on preferences for light intensities to support their contentions that high intensities are necessary for adequate seeing. The mean choice was about 100 foot candles but the median was 50 foot candles when up to 1,000 foot candles were available. Tinker's analysis [16] of light preference studies indicated that visual adaptation plays an important rôle in determining the preferences. In an experimental check, Tinker [20] found that when readers were adapted to 8 foot candles, the median choice for comfortable reading was about 12 foot candles. But when adapted to 52 foot candles, the median choice was 52 foot candles. It is obvious that the intensity of illumination to which the reader is adapted plays a dominant rôle in his illumination preference. The conclusion is, therefore, that preference for illumination intensity is not a satisfactory method for determining the intensity of light needed for efficient visual work.

Visual acuity—Luckiesh and Moss [9] and Luckiesh [8] list visual acuity as a basic factor in reading (and presumably in other visual work). It is true enough that visual discrimination does depend somewhat upon visual acuity. But is visual acuity an adequate criterion for prescribing appropriate lighting? Luckiesh and Moss [11] admit that, in many tasks the criterion of visual acuity is relatively inappropriate, i.e., in tasks involving low contrasts. But they point out that for black test objects on a white background, visual acuity improves up to 100 foot candles. As a matter of fact Lythgoe [13] has shown that under certain conditions of measurement, visual acuity improves up to and beyond 1,000 foot candles. Inspection of the data reveals that the knee of the curve of improvement is at about 10 foot candles and that beyond about 20 foot candles the gains are slight. It must be kept in mind that in measuring visual acuity, one is dealing with threshold values. It is highly questionable whether the almost microscopic gains in visual acuity obtained under the high foot candles justify their application to visual tasks where supra-threshold visibility is involved as in most everyday situations. Furthermore, data reveal that the visual acuity curve is practically horizontal from 50 foot candles to the higher levels.

Luckiesh and Moss [9] and Luckiesh [8] cite data on visual acuity for 1, 10, and 100 foot candles only. If they really desired to find the foot candle level

beyond which no *practical* gains in visual acuity occur, they should have investigated the range between 10 and 100 foot candles. As shown in Tinker's reviews,[23, 25] this criticism may be aimed at all the basic data presented by Luckiesh.[8] In some instances (decrease in heart rate, decrease in convergence reserve of ocular muscles), data for only 1 and 100 foot candles are presented. It appears then, that visual acuity data are of only slight use for prescribing illumination intensities for visual discrimination in supra-threshold tasks. If accepted, there is no justification for suggesting that more than 40 to 50 foot candles are necessary for adequate discrimination even for tasks that approach threshold discrimination.

Visibility measurements — Luckiesh [8] states that "After establishing a standard of visibility or desirable see-level to be attained if possible for all tasks, it is seen that specifications of light and lighting and other aids to seeing can be based upon visibility measurements." The measurements are to be made by the Luckiesh-Moss Visibility Meter. This is a device consisting of two identical circular gradients which are rotated before the eyes to alter the brightness contrast of the object whose visibility is to be measured. It, therefore, reduces the object to threshold visibility. It is the threshold which is measured. Three assumptions are made: (a) Two objects are equal in visibility when both are barely visible; (b) "Two objects are equally above threshold visibility when their visibility has been increased by the same increase" in size, brightness, brightness contrast or time; (c) "The visibility of an object, or degree of supra-threshold visibility, is proportional to the decrease in any one of the fundamental factors necessary to reduce the object to threshold visibility." These assumptions are considered to be *axiomatic* and arguments against them are considered to be *futile*. Nevertheless, since recommended standards are based upon visibility measurements to a large degree, it seems desirable to examine the matter further. Things are not axiomatic just because someone says they are.

Since visibility measurements are in terms of threshold values, they are analogous to visual acuity measurements. They are subject, therefore, to the same criticisms as visual acuity measurements as criteria for prescribing illumination standards.

Luckiesh [8] emphasizes foot candles for equal visibility in prescribing illumination intensities. For example, to make newspaper text matter equivalent in visibility to 8 point book type on white paper under 10 foot candles of light, it is necessary to use 30 foot candles. And to make the 1/64 divisions on a steel scale equal to this visibility level, 180 foot candles are needed. Are these levels of illumination intensity required for efficient and comfortable seeing? Luckiesh [8] assumes that this is a conservative standard. On his empirical scale, the 8 point type with 10 foot candles has 48 per cent maximum visibility. (Maximum visibility is obtained from a test-object whose critical detail has a visual size of 20 minutes; a critical detail of 1 minute is the smallest visible by persons with normal vision under 10 foot candles of light.) But no adequate experimental check is made of performance of these tasks under various levels of illumination. Tinker [21] found that the critical illumination level (the intensity beyond which no further change in reading performance occurs as the intensity is increased) for reading 7 point newspaper type to be approximately 7 foot candles. It is difficult to conceive the need of going above 20 foot candles to provide a margin of safety above the critical level. It is highly probable that an experimental

check will reveal that other visual tasks, like discriminating the divisions on a steel scale, do not require the 180 foot candles indicated for efficient vision by the *computations* of Luckiesh. Related to this is the question of comfortable vision. Harrison,[6] in discussing the difficulty of using high intensities because of the introduction of glare factors states "Visibility and comfort are two separate factors which do not always overlap completely."

No one will deny that visibility is an important factor in ease of seeing. But to prescribe standards in terms of scores derived from measurements made with the Visibility Meter is open to serious question. The basic data are threshold scores. While the derived scores may appear logical, supra-threshold seeing is not the same situation as threshold seeing. Apparently, as illumination intensity is increased, one soon reaches a level of diminishing returns where further increase is of no practical importance or may introduce harmful factors from the viewpoint of easy and comfortable seeing.

Nervous muscular tension—Luckiesh and Moss [9, 10] place great stress upon the apparent decrease in nervous muscular tension during reading as the illumination intensity is increased from 1 to 10 to 100 foot candles. Tinker's [16] analysis of their data reveals that the method employed to present their results magnifies minute differences so that they appear large. Interpolation shows only gradual changes from 10 to 20 to 25 foot candles and very slight changes from there on to 100 foot candles. The conclusion that high foot candles are needed for ordinary reading is not valid. In a comparable situation, Tinker [19] found that for reading 10 point type, the critical intensity was about 3 foot candles. Below this level rate of reading was retarded and fatigue increased, but for higher intensities there was no change. For people with normal vision, 10 to 15 foot candles should provide a satisfactory margin of safety for reading legible print.

Frequency of blinking — Another favorite criterion employed by Luckiesh and Moss [9, 10] and Luckiesh [8] as a basis for prescribing illumination intensities for visual work is frequency of blinking. The typical experiment is to measure the rate of involuntary blinking for the first and for the last five minutes for an hour's reading under 1, under 10, and under 100 foot candles of light. They note that the blink rate is greater under the 1 than under 10, and greater under 10 than under 100 foot candles. Therefore it is concluded that relatively high intensities are desirable for reading. Even if these data are accepted as valid, we do not know where between 10 and 100 foot candles the curve of increased efficiency flattens out since intermediate intensity values were not studied. But there are several sources of information which suggest that blink rate is not a valid criterion of ease of seeing: (a) McFarland, Holway, and Hurvich,[14a] after a searching analysis of their own extensive experiments and of other studies, state: "A high blink-rate need mean neither an increase in fatigue nor an increase in difficulty of seeing." They conclude that "the rate of blinking can hardly be considered as a valid index of visual fatigue." (b) Tinker,[26] in a study that has some bearing on the subject, found that frequency of blinking is an inadequate criterion of readability of print. (c) Bitterman,[1] working with 3 and 91 foot candles of light, found that when subjects read for 40 minutes, there was no significant difference in rate of blinking. In fact, the frequency of blinking was slightly greater under the 93 foot candles. Incidentally, Bitterman also found no significant difference in blink rate for reading large type vs. small type. His results, therefore, indicate that rate of blinking cannot be employed as an

index of ease of visual work. (d) The statistical treatment employed by Luckiesh and Moss [9, 10, 12] to treat their data is open to severe criticism. Tinker [22, 23] has questioned the appropriateness of the geometric mean which they employ in most comparisons.

The same criticism is raised by Hoffman.[7] In a searching analysis, Hoffman [7] severely criticises the use of the percentage technique employed by Luckiesh and Moss for presenting data, and for basing conclusions on percentage differences rather than on raw score differences. Percentage scores are notoriously unreliable. Furthermore, if the raw scores are below 100 (as most of them are), percentages magnify the differences. When percentages are used, therefore, the observed differences may be largely an effect of the derivation. Insignificant raw score differences may seem large when put into percentages. For instance, a typical average of 30 blinks during 5 minutes of reading is increased 10 per cent by a change of 3 blinks. Hoffman further points out that work decrement may be a more important variable than illumination changes in the results of Luckiesh and Moss. In general, he found little support for the contention that relatively high intensities are needed for effective and easy seeing. (d) Eames [3] criticises Luckiesh and Moss [12] for using relatively few subjects in their experiments (including blink rate studies) and for employing "test wise" subjects. As pointed out by Eames, "People who take tests repeatedly in a given field gradually learn what is expected of them" and are unintentionally influenced by this. Results obtained under such conditions cannot be representative of the reactions of the general population.

The accumulated evidence indicates that rate of blinking cannot be accepted as a criterion for specifying intensities of light for visual work.

Decrease in heart rate—Luckiesh [9] and Luckiesh and Moss [9, 10, 12] cite data on change of heart rate while reading for one hour under 1 foot candle and under 100 foot candles of light. No data are presented for intermediate levels of illumination. It is stated that heart rate decreased 10 per cent under the 1 foot candle and 2 per cent under 100 foot candles. The conclusion was that from the viewpoint of ease of seeing the 100 foot candle level is desirable. An experiment by McFarland, Knehr, and Berens [14] was designed to check the findings obtained in Luckiesh's laboratory. The results led to the conclusion that "It is questionable whether reliable criteria for determining adequate levels of illumination for tasks such as reading during short periods of time (approximately 2 hours) can be obtained in terms of . . . heart rate. . . ." Another check experiment was carried out by Bitterman.[1] He recorded heart rate while reading under 3 and under 91 foot candles of light. "The results do not support the conclusions of Luckiesh and Moss with respect to the value of heart rate" as an index "of the ease of visual work." In view of the above evidence we must reject heart rate as a criterion for prescribing illumination intensities for visual work.

Decrease in convergence reserve—Luckiesh and Moss [9, 10, 12] and Luckiesh [8] cite data on decrease in convergence reserve of ocular muscles after reading for one hour under 1 and under 100 foot candles of light. The decrease was less under the 100 foot candles. No data are given for the range between 10 and 100 foot candles. We do not know, therefore, whether the 100 foot candles level is significantly better than such levels as 20 or 30 foot candles.

Visual adaptation—Throughout their writings, Luckiesh and Moss [8, 9, 10, 12] emphasize that the eyes evolved under daylight levels of illumination and suggest the desirability of competing with

daylight by artificial means. They consistently ignore the fact that the eyes readily adapt to easy and effective seeing over a wide range of illumination intensities.

Summary statement—Examination of the data employed by Luckiesh and Moss as a basis for specifying foot candle levels for visual work reveals a general lack of validity of these results as criteria for ease of seeing. The data from visual acuity, muscular tension, and visibility measurements are misinterpreted or misapplied. The blink technique and rate of heart beat must be rejected because of lack of confirmation by independent workers. Furthermore, the methods of statistical analyses employed are frequently at fault. Any science of seeing based upon such an unstable foundation, therefore, must lack validity. Since these data have been the justification for specifying what appear to be excessively high levels of illumination intensity, we must reject such specifications unless justified by valid evidence from new experimentation.

LIGHTING CODES

School lighting—The American Recommended Practice of School Lighting[27] specifies the following minimum foot candles in service: 15 for classrooms, shops, and offices, 25 for sewing and drafting rooms, and 30 for sight-saving classes. There is general agreement on the importance of hygienic illumination in reading and study situations. The recommended foot candle levels seem satisfactory in view of research findings other than those cited in the code. There should be, of course, a sound experimental basis for recommendations of this kind. Tinker[17] has pointed out that the recommended practice for school lighting is based upon conclusions derived from misinterpreted experimental results. Fortunately, the recommended practice is adequate in spite of inferences from inadequate data.

In a later publication by Sturrock,[15] the foot candle levels are not in an approved code but are listed as the levels found desirable in the experience of successful business institutions, i.e., good present-day practice. For schools the foot candles listed include: 30 for study halls, classrooms, general laboratories, general manual training; 50 for drawing room, close work in laboratory, sight-saving classes; 100 (considered especially low) for close work in manual training, in sewing rooms. It is obvious to the impartial person who knows the field that these suggestions represent more intense illumination than is necessary for adequate seeing in the school situation. Data summarized by Tinker[18] and additional experimental evidence[19, 21] indicate that about 15 foot candles are adequate for ordinary schoolroom tasks, and that 25 to 30 foot candles are satisfactory for the more severe tasks. Justification for the higher intensities is sought in the discussions of Luckiesh and Moss[10, 12] and Luckiesh.[8] These have been evaluated above.

Office lighting—The Recommended Practice of Office Lighting[28] includes the following foot candle levels: 50 for difficult seeing tasks such as accounting, bookkeeping, and drafting; 25 for ordinary seeing tasks such as general office work, private office work, mail rooms; 10 for casual seeing tasks such as reception rooms and washrooms; 5 for simple seeing tasks such as halls and stairways. Considering the severity of the tasks performed by some workers in general offices and special (as accounting) offices, the above recommendations are satisfactory. The 50 foot candles, however, should be considered liberal even for the difficult seeing tasks. The statement that "Higher values will contribute greatly to accuracy, speed and ease" cannot be accepted as valid.

Sturrock's [15] summary of good present-day practice does not deviate markedly from the recommended practice except that typing and prolonged reading of shorthand notes are listed at 50 foot candles and intermittent reading and writing at 30 foot candles. Each of these is about twice what is needed in terms of the visual task. The basis for the higher intensities is in terms of the discussions of Luckiesh and Moss.[10, 12] The inadequacy of these data has been pointed out above.

Industrial lighting—A wide range of illumination intensities is recommended for various tasks in industry.[29] Among the higher foot candle recommendations are: *over* 100 foot candles for such operations as extra fine assembly, automobile finishing, and inspecting, cutting and sewing dark goods, engraving, proof reading, final inspection of tire casings, grading and sorting tobacco products, and certain inspection work in textiles; 50 to 100 foot candles for such operations as automobile assembly line, glass works inspection, fine inspection, bookkeeping, font assembly—sorting in printing industry, tin plate inspection, and stitching dark leather. With regard to all the recommendations, one is cautioned that the foot candles are minimum operating values and that in almost every instance higher values may be used with greater benefit.

It is stated that the recommendations are taken from a series of studies on the illumination needs of specific industries, or if not available there, from current good practice. Examination of these studies (listed on page 23 of report) indicates that in the main they are surveys rather than experiments. Furthermore, there is a lack of adequate descriptions of techniques employed. In a few instances a general description of methods was given. Apparently what happened was first to make a survey of practice. This was followed by some sort of job analysis to determine what has to be discriminated. Then by reference to research studies (as those reported by Luckiesh and Moss in their books), to deduce the intensity level of illumination presumably needed for the specific job. This method has some virtue providing sound data are referred to, which was not done in these cases. In a few instances it is stated that visibility measurements were made. Occasionally installations to achieve the recommendations were made, the effect observed and additional modifications made. In no case was there experimental determination of the light intensity needed.

There are no valid experimental data which indicate that more than 50 foot candles are needed even for those practical visual tasks which approach threshold discrimination. Furthermore, as pointed out by Harrison,[6] visual comfort may decrease under high intensities.

Home lighting—The most recent recommended practice for home lighting [30] specifies intensities ranging from 10 foot candles on card tables to 100 and more for sewing on dark goods. Forty foot candles are recommended for such situations as children's study table, kitchen work counter, laundry, and for prolonged reading. There is no valid reason for going above 25 to 30 foot candles for the more severe visual tasks in the home.[18] Approximately 15 foot candles is adequate for many of these visual tasks. Figure 1 in the *Recommended Practice* [30] is misleading. "This chart shows the extent to which occupations and poor seeing conditions leave their mark on eyesight." The implication is that poor illumination causes ocular disability. There are no valid data which indicate this to be so. This chart represents an unjustified form of propaganda.

Present-day practice—Sturrock [15] has assembled foot candle levels of illumination which are labeled "good pres-

ent-day practice." The tables are preceded by a classification (after Luckiesh and Moss) of foot candle needs for visual discrimination of tasks varying in difficulty. The material is apparently designed as a guide but is not necessarily in the form of recommendations. This sort of thing is valuable in many ways. But since it is based to a considerable degree upon the material presented by Luckiesh and Moss [10, 12] and by Luckiesh,[8] the illumination intensities are excessively high in some instances, as 100 foot candles for sewing and proof reading, and 50 foot candles for reading small type and for kitchen counters. It should be pointed out, however, that much of the material is fairly satisfactory.

Summary — intensity standards— Recommended practice prior to 1940 [27] is fairly adequate, but as new codes are issued at later dates the apparent tendency has been to recommend as intense lighting as the traffic will bear. This is justified by referring to the work of engineers (largely Luckiesh and Moss) who state that these high intensities are still less than adequate for easy seeing. As pointed out above, both the experiments and the conclusions which are cited as fundamental are frequently invalid. Furthermore, the data are out of line with other independent experimental results.

VISUAL FACTORS

Eye disabilities—It is generally accepted that eyes with disabilities, even when corrected by glasses, need brighter light than normal eyes for adequate visual discrimination. Ferree and Rand [4] and Ferree, Rand, and Lewis [5] are usually cited as supporting evidence. In the first study,[4] it was found that apparent diopters of accommodation increased more for 14 presbyopes than for normal eyes in going from 1 to 5 to 25 foot candles of light. Interpolation indicates that for the normal eyes the curve of improvement shows little rise after about 8–10 foot candles; for the presbyopes, after about 15 foot candles. In addition *one* myope, and *one* presbyope were compared with a normal subject by measuring apparent diopters of accommodation at 13 intensities from 0.5 to 100 foot candles. The curve of efficiency for the normal person improved rapidly to 5 foot candles, then more slowly to about 20 and very gradually thereafter; for the myope there was considerable improvement to about 20 foot candles and little thereafter; for the presbyope there was considerable improvement to about 38 foot candles, and then slower improvement to 100 foot candles. It is of course impossible to generalize from *one case*, but apparently those with eye disabilities need somewhat brighter light than normals for clear seeing. This does not mean that they need 100 foot candles or more as some people wish to imply.

In the other study [5] Ferree and Rand were concerned with distant (20 feet) vision. The visual acuity for 4 presbyopes was compared with acuity for 3 normal people. The presbyopes continued to gain in visual acuity from 25 to 100 foot candles while the normal eye made little gain within this range. Since there is little or no relation between acuity of distant vision and acuity at near vision, these results have no bearing upon visual discrimination at the work surface (desk, work bench, etc.). Furthermore, one should not prescribe illumination for supra-threshold tasks in terms of threshold measurements (visual acuity). There is no evidence from these studies which implies that excessively high foot candles are necessary for those with ordinary visual disabilities. Rather, they suggest a moderate increase for those with corrected vision as compared with normal eyes.

Visual adaptation—It is well established that the eyes readily adapt to easy and effective seeing over a wide range of illumination intensities. This adaptation is rather slow in going from bright to dimmer illumination (for practical purposes, 15–20 minutes), and rapid in going from dim to bright illumination (1–3 minutes). Tinker [19] has demonstrated that when adaptation is incomplete on shifting to a lower level of illumination, speed of perception is retarded. When adaptation is adequate, however, visual perception in reading is fully effective from 3 foot candles up for normal eyes in reading legible print. In another study, Tinker [20] showed that subjects tend to prefer for reading approximately the illumination intensity to which they have been adapted, whether it be 8 or 52 foot candles. These data indicate that readers tend to consider comfortable for easy reading any one of a wide range of illumination intensities provided such intensities are above critical levels and provided visual adaptation is adequate. Codes of lighting have consistently ignored the rôle of visual adaptation in seeing. They carefully point out that the eye has evolved under the bright illumination of daylight, but do not mention that the eye also evolved to see adequately at low as well as at high intensities of light.

ILLUMINATION FOR ADEQUATE SEEING

Critical levels of illumination—The critical level of illumination is the intensity beyond which there is no further increase in efficiency of performance as the foot candles become greater. Tinker [18] has summarized the data for critical levels of illumination: for reading of legible print (about 10 point on good paper) by adults, it is approximately 3 to 4 foot candles; for reading and study of children, 4 to 6 foot candles; for arithmetical computations, less than 9.6 foot candles; for sorting mail, 8 to 10 foot candles; for the exacting task of setting 6 point type by hand, 20–22 foot candles; and for very fine discrimination required to thread a needle, 30 foot candles. In a later study, Tinker [21] found the critical level of illumination for reading newspaper print to be about 7 foot candles.

Adequate levels of illumination—It is obvious that visual work should not be done at critical levels of illumination. There should be an adequate margin of safety to provide for individual variation and the like. For such visual tasks as reading good sized print (10 to 11 point) on a good quality paper, i.e., print of good legibility, 10 to 15 foot candles should provide hygienic conditions when one's eyes are normal. For situations comparable to the reading of newsprint, 15 to 20 foot candles should be adequate. In situations involving the reading of handwriting and other comparable tasks, 20 to 30 foot candles seem desirable. For tasks comparable to discrimination of 6 point type, there should be 30 to 40 foot candles. And for the most severe tasks encountered in work-day situations, 40 to 50 foot candles will be found adequate. There is no valid experimental work now available that indicates a need for over 50 foot candles intensity for adequate visual discrimination. The intensity values from 10 to 20 should be increased somewhat (5 to 10 foot candles) for eyes with slight disabilities or for those with corrections. For the higher values, however, no practical gain will be achieved for these people by increasing the intensity. The above suggestions hold for school children as well as for adults. In general, the child has much less severe visual tasks than adults.

Intensity of illumination cannot be prescribed without coördinating it with other factors such as distribution of light and brightness contrast. A good example of the uselessness of excessively

bright light is found in the study by Darley and Ickis.[2] They were concerned with vision in the drafting room, a very severe visual task. In comparing 30 with 75 foot candles of indirect light, they found the efficiency ratings for the two to be only slightly different. When they compared 40 with 80 foot candles of direct light (troffer) under conditions of no reflected glare, they also found no significant differences in the efficiency ratings. The observations of Harrison[6] are relevant here. He points out the dangers of glare with installations of 50 foot candles and above of artificial illumination.

SUMMARY REMARKS

Examination of the literature upon which lighting recommendations are based reveals that some technique of experimentation are invalid, and that interpretations from certain other data are unwarranted. Some of the recommendations are adequate, others are not. The trend seems to be to specify as high intensities as the traffic will bear and at the same time warn the consumer that if he uses still higher intensities, he will improve his ease of seeing. All will agree that there should be sufficient light for adequate seeing. It is high time, however, that the consumer know what is adequate and what is surplus.

In general the recommended practice concerning distribution of light, brightness contrast and color of light is satisfactory.

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Recent Developments in Murine Typhus Fever Control*

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MURINE, or rat-borne, typhus fever in the United States increased steadily from 1913, when the first case was reported in Georgia, to 1940. During 1940 the reported cases dropped nearly a thousand to 1,845, but during the next four years increases of about a thousand cases a year were recorded (Figure 1). In 1944, more than 5,300 cases were officially reported to state health departments. The total reported cases for 1945 is 5,167, which represents the first decrease since 1940. Since reporting has been far from complete, it is believed that the 5,167 cases reported in 1945 may represent about 25,000 actual cases of murine typhus fever.

Although typhus has been reported from 37 states and the District of Columbia during the last five years, over 67 per cent of the cases have been confined to 100 counties in nine southern and southeastern states (Figure 2). These counties, however, have an annual incidence of 10 or more cases per year for the last five years and in one is greater than 100 cases per year. Annual morbidity rates ranged up to more than 430 per 100,000.[1]

In the North, typhus can be almost universally traced to very small areas of the business sections of towns or cities, and usually it will be found that cases were contracted in one or more food handling establishments. There is little or no typhus traced to residential or rural sections north of about 33° north latitude.[2] South of this line, however, especially in southwest Georgia, southeast Alabama and certain parts of Texas, typhus strikes anywhere and as much as half or more of the cases are contracted in residential and rural areas.

Typhus is primarily a disease of rats, secondarily of man, but it is as debilitating to humans as, for example, typhoid fever. While the general public is not alarmed at the high incidence of typhus in certain sections, this disease is equally as important and should receive as much attention as is given to typhoid fever. It is believed that rodent ectoparasites, principally fleas, are the vectors transmitting typhus from rat to rat and rat to man. It is not known whether typhus is transmitted directly by biting or indirectly as from infected flea excreta. It is believed, however, that

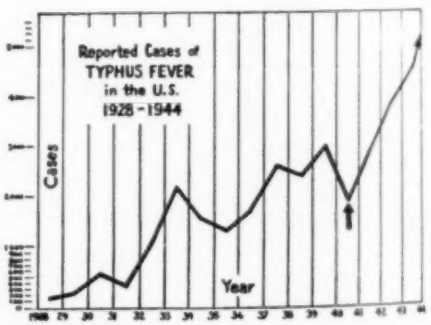

FIGURE 1—Reported cases of typhus fever have increased nearly a thousand per year since 1940.

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FIGURE 2—Distribution of Murine Typhus Fever in Southeastern United States 1945

among the ways that man may become infected with typhus fever are: ingestion of food infected by flea feces or rat urine, inhalation of dust previously infected by rats or fleas, and infection through the broken skin. Although it is very possible that a rat may be infected with the typhus Rickettsiae from another rat without an intermediate vector, the rat flea seems to predominate as the means of transmission.

METHODS OF TYPHUS CONTROL

Typhus control methods may be divided into three categories: control of rats, control of rat fleas or ectoparasites, and control by vaccination.

Rat Control

Rat control may be attained by one or more of three methods: community poisoning programs, ratproofing and eradication in business establishments of towns, and good general sanitation. Poisoning and other rat extermination measures have been applied for many years by individuals, commercial pest control operators and local health departments with the assistance of state health or other departments, the U. S. Fish and Wildlife Service, and the U. S. Public Health Service. Sufficient data on rat census figures before or after poisoning are not available to know to what level the rat infestation must be reduced to control typhus. Poison baits are often ineffectual; poison bait was distributed throughout one entire town with apparently not a single bait being taken by rats. Poisoning campaigns must be repeated for effective rat control or there must be some follow-up to eliminate heavily infested areas that still remain. Such campaigns cost about $100 to $125 per 1,000 population, and they have the advantage of being rapidly performed. Where typhus is widespread in cities or counties, it appears desirable to distribute poison at sufficient frequency to keep rat infestation at the lowest practicable point. Poisoning pro-

grams have definite economic value and public health significance aside from typhus control, and are therefore highly recommended. In Coffee County, Alabama, a county-wide poisoning program with two applications in a period of nine months reduced typhus fever by 50 per cent while the five adjacent counties showed a concurrent decrease of 5 per cent.

Ratproofing of all existing business establishments under an ordinance, followed by eradication of all rats within them has demonstrated at Orangeburg, S. C., that typhus in cities north of the highly endemic zone can be eliminated. The original cost of ratproofing and rat eradication in existing buildings is considerably higher than poisoning. However, businessmen are almost always willing to pay these costs which in the fiscal year 1945 amounted to $80 per building for ratproofing, and $11 per establishment for rat eradication. Usually they realize a complete return of their investment within a year and sometimes the savings in rat damage pays the cost of the work in a month. Ratproofing programs therefore require only a limited appropriation of public funds and usually receive wide approval due to their economic, esthetic, and public health significance.

Where all human cases of typhus originate in business establishments, a ratproofing and rat eradication program alone will control typhus but will not control the rat population of the city. Even in the areas of highest endemicity, ratproofing projects may reduce typhus by 50 per cent, since business establishments are still the principal foci for typhus. These programs, however, must be maintained indefinitely by regular inspectional service by the health department followed by corrective measures by the building owners or occupants when indicated. A completely ratproof and rat-free building will not long remain so if rats are present in adjacent environs and they have incentive to enter the building. Permanent inspectional service should be a part of the regular activities of the local health department.

Ratproofing is slower than other typhus control measures but, even so, all business establishments in a large city can be treated in two or three years if materials and labor are available. Increasing the number of crews at intervals is simple since the revolving fund principle is utilized. If that part of the typhus control ordinance relating to new construction is enforced, it will eventually result in all premises being constructed in a ratproof manner. At present ratproofing of poorer class residences in the South is impractical.

General sanitation of the community is equally as important as rat elimination operations in the control of typhus. To be effective, any method of rat control must be accompanied by proper community sanitation measures, particularly with respect to the elimination of rat food and harborage. Items such as proper garbage and refuse storage, collection and disposal (Figure 3); correct stacking of goods to eliminate harborages; and the isolation of stock and chicken feed from rats cannot be overemphasized. Typhus control programs therefore tie in very closely with good general sanitation activities.

Control of Rat Ectoparasites

A second method of typhus control attacks the intermediate vector rather than the host. Control of rat fleas can be attained by the application of DDT dust to rat runs and other places frequented by rats.[3] Thus, if fleas are either the direct or indirect transmitters of typhus, residual dusting may be expected to control typhus among rats and also among humans. While the application of DDT dust is fairly expensive, it has the distinct advantage over other methods of typhus control

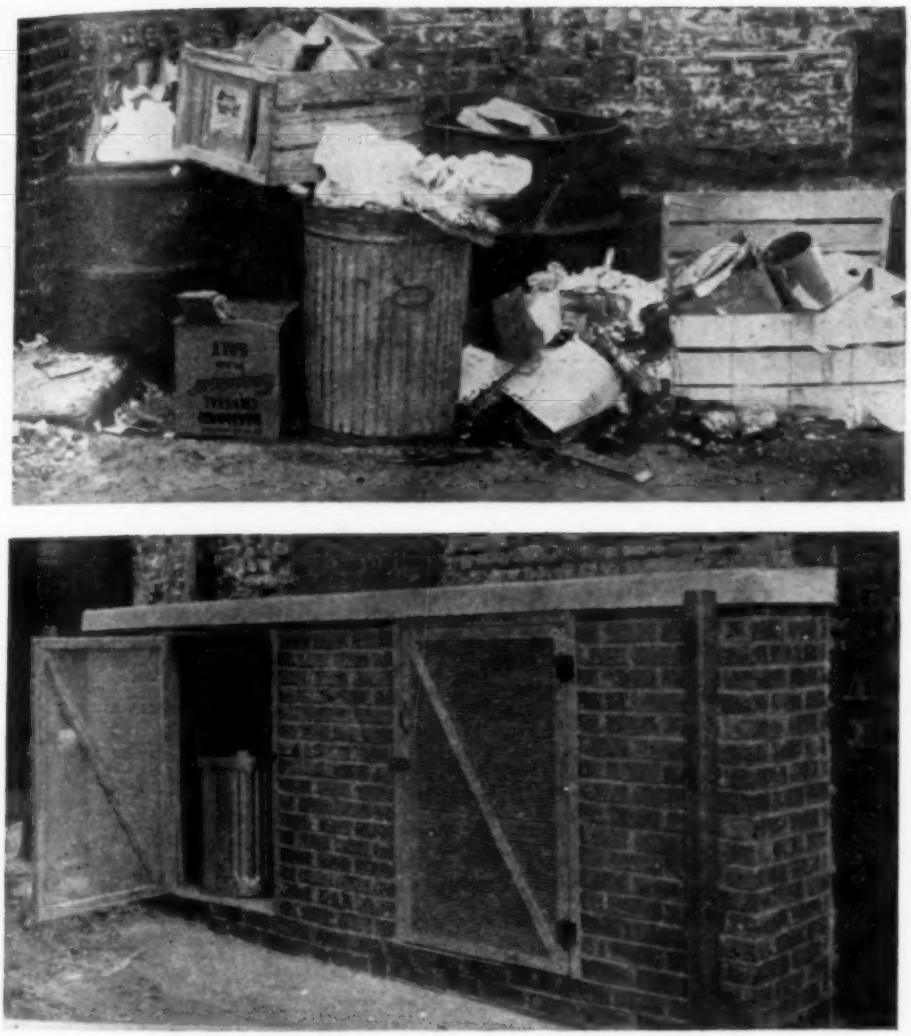

FIGURE 3—An unsatisfactory and a satisfactory method of garbage and refuse storage

in that quick results may be obtained. Residual dusting for typhus control is not a very popular method because it fails to reduce the rat population. Instead, it provides a healthier, or at least more comfortable environment for the rat. Also dusting does not control any other rat-borne disease, except plague.

Residual dusting should be considered as a temporary means of typhus control similar to residual spraying of houses for malaria control. Rat poisoning for control of typhus is considered to be comparable to larviciding as a means of controlling malaria; whereas, ratproofing may be likened to drainage. All three methods should be conducted together in a well balanced typhus control program. Such a permanent program should be under the direction of the local health department.

Vaccination

Vaccination as a preventive for murine typhus is in the experimental stage

at present since murine typhus vaccine has only recently been developed. Vaccines made from strains of louse-borne typhus Rickettsiae have not appeared to be satisfactory in preventing murine typhus but may lessen the severity of the disease. Mass vaccination utilizing murine typhus vaccine has been conducted recently in one town in Texas.

TYPHUS CONTROL OPERATIONS

State Health Department—U. S. Public Health Service Program

By combining malaria, *Aedes aegypti* and typhus control activities and jointly utilizing existing personnel and equipment, it has been possible for the Public Health Service to expand typhus control operations of state health departments since July 1, 1945, from 20 ratproofing programs to 101 projects as of October 15, 1945. Of these, 56 projects involve the use of DDT dust, some accompanied by rat poisoning, and 45 projects combine ratproofing and eradication with DDT dusting. Funds for the present fiscal year will not permit much more expansion than has already been attained. In these projects Public Health Service personnel, which are under the direction of state health departments, have been increased from about 60 to nearly 400 during the first 3½ months of the current fiscal year. In the aggregate, approximately 67 per cent state and local participation is being secured. All methods of rat and rat-flea control are advocated—poisoning, ratproofing and eradication, good general sanitation, and residual dusting. Coördination and stimulation of federal, state, and local (as well as private companies and individuals) effort to achieve maximum control of rats and their ectoparasites is the key operational objective.

Ratproofing and Rat Eradication Operations

Ratproofing is defined as a relatively inexpensive method of construction designed to keep rats and mice from entering business buildings and to limit their travel within buildings (as from establishment to establishment and room to room) as much as possible. It embraces all of the following to the extent that they are feasible: vent stoppage, elimination or reduction of interior and exterior rat harborages, proper storage of garbage, and proper stacking of materials and merchandise. The construction proceeds block by block until all business buildings are completed. The complete elimination of interior rats is started immediately after each establishment has been ratproofed. Enforcement of the ordinance is very rarely necessary but is resorted to in the case of extremely recalcitrant owners.

While it would be very desirable for private industry to conduct the ratproofing and rat eradication operations systematically in accordance with health department specifications, experience at several important cities during the past four years indicates that programs relying upon private enterprise have proceeded either extremely slowly or not at all. For this reason it has been necessary for health departments to provide trained crews who will conduct the operations on a contract basis. Such is not a normal function of a health department, and it is hoped that building contractors and pest control operators will soon provide this service. The increasing interest recently expressed by these groups is encouraging. Inspectional service by personnel, who have received the necessary intensive training in ratproofing and eradication, is properly a function of the health department where rat-borne diseases are a factor. A six week intensive field and didactic training program is offered periodically by the U. S. Public Health Service in Atlanta.

It is not within the scope of this discussion to describe the various construc-

tion items involved in ratproofing buildings. Work may be conducted from truck or trailer workshops or from fixed workshops equipped with ordinary carpenters' and masons' tools plus metal bending brakes, metal slitters, tinsnips, and metal punches. The trend of construction today is toward more durable and neater work involving concrete, sheet metal, and masonry rather than wood. Screens for vents and windows, for example are now made with heavy hardware cloth or expanded metal mounted in riveted sheet metal frames. Metal channels and cuffs, rather than false flashing, are provided to protect rear and side doors against rat entrance. Where front doors require treatment, attractive kick plates are installed. The construction of plain or flanged metal frames for screens and of channels and cuffs, for doors has been greatly speeded up and simplified through the use of templates. A method of constructing concrete curtain walls rapidly has been developed with the use of 2″ x 4″ spacers and corrugated cardboard forms.

Although ratproofing is the more expensive part of the work, the elimination of all rats within the ratproofed buildings is more important. Various means are used to eradicate rats, including the use of poison water, poison baits, fumigants, and traps. Two new rodenticides have helped materially in reducing the average time required to free establishments of rats from 2 or 3 months to 2 or 3 weeks. These are "1080" and "ANTU."

Water poisoned with 1080 (sodium fluoroacetate) is the most effective means of eradicating rats aside from fumigation.[4] This chemical is extremely toxic and has advantages over other rodenticides in that it is more readily accepted and kills more rats and mice before they reach inaccessible places. With a concentration of 12 to 14 gm. per gal. of water, placed in ¾ oz. paper cups, an average of six rodents per 10 cups or 11 rodents per establishment were recovered during a two month reporting period in 67 ratproofed establishments. From the standpoint of dead rodent recovery, 1080 was more than ten times as effective as all other poisons used last year in typhus control programs. Extreme care must be exercised in the use of 1080 because it is very toxic to all animals, and no antidote has yet been developed. The amount of poison required to kill an adult Norway rat is sufficient to kill a dog 25 times as heavy or a cat 10 to 17 times as heavy as the rat. This rodenticide is commercially available to city, state, and federal agencies, and will soon be released to qualified pest control operators.

The compound "ANTU" (alpha-naphthyl-thiourea) has been used by various investigators in poison grain baits, poison water, and as a dust.[5] On typhus control programs the latter method only has been attempted. Excellent to poor kills of Norway rats and practically no results against the smaller roof rats have been reported. A 20 per cent mixture of the poison in flour or talc is applied to rat runs in a manner similar to that for DDT residual dust. The poison apparently is ingested by rats during cleaning and preening after getting it on their bodies. Since fairly large quantities of ANTU are required when applied in dust patches, this method probably will be confined to special establishments where it is desired to eradicate Norway rats. In prepared baits the compound apparently compares favorably with other rodenticides when considered as a specific poison for Norway rats. Two advantages of ANTU are its high toxicity to certain rats as against a low toxicity for most other animals, and its apparent slight emetic property. A decided disadvantage, however, is that ANTU tolerance in rats is quickly established and lasts for several months.

Originally trapping, an expensive method of rat eradication, was the sole operation conducted in the ratproofed buildings. With the recent advances in poisoning procedures and the development of new rodenticides, trapping is not required at all as an eradication measure in more than one-third to one-fifth of the establishments. Other methods of eradication continue to be utilized, such as: dusting burrows and small enclosed harborages with calcium cyanide; fumigation of entire buildings with hydrocyanic acid gas; and the use of three or more types of baits poisoned with such rodenticides as 1080, thallium sulfate, zinc phosphide, arsenic trioxide, or fortified red squill. Red squill is safe to use out-of-doors or where animals other than rats might eat it since it has an emetic property. It is therefore the most common rodenticide used in poisoning campaigns.

As important as the initial ratproofing and rat eradication, is the necessity for inspectional service to insure the maintenance of buildings in a ratproof and rat-free condition. The general policy on typhus control programs is to continue inspectional service by the health department as a part of the permanent sanitation program but to abstain from making later contracts for ratproofing or for eliminating rat reinfestations. These are considered to be maintenance responsibilities of owners and occupants of the buildings.

Residual Dusting Operations

A 10 per cent DDT—90 per cent pyrophyllite or talc mixture is applied by means of simple hand dusters to rat runs, harborages, entrances, feeding points, and other places utilized by rats. Dusting, except in a few county-wide projects where typhus is the most widespread, is presently confined largely to business establishments and significant typhus foci areas. The dust is generally applied in patches rather than being distributed in clouds, a fairly heavy layer being utilized for the residual effect. Rats walking through the dust get it on their bodies and carry it to their nests. The dust does not kill rats except occasionally when they happen to inhale or ingest a direct blast of it. Cats and dogs are carefully dusted since it has been determined that they occasionally harbor infected rat fleas. Care is exercised in dusting around foodstuffs and restaurant equipment, but otherwise there is little danger from the application of DDT dust. The average amount of dust mixture used per premise varies from 1 to 5 lbs., depending upon the type, size, and degree of rat infestation.

A large hand shaker about the size of a gallon can, holding slightly less than 5 lbs. of dust, is generally used for dusting along runways that are readily accessible. This shaker has a handle which can be mounted on either the wide or narrow side as desired. The top is provided with 20 or 24 mesh screen across the entire surface or 16 to 24 mesh screen over a strip only an inch or two wide with the rest covered by metal. For the more inaccessible places, a small hand shaker having a capacity of about 1 lb. is utilized. A common mailing tube with holes punched in the end or with a screen in the top provides a satisfactory shaker. A pole may be fastened to the tube when it is desired to dust on the top of overhead pipes or beams or in back of merchandise.

A hand pump duster, similar to that used by gardeners, is another very useful piece of equipment. Such a pump is used for dusting runways in the open or in fairly concealed places and also for dusting enclosed harborages or burrows. Pumps with fairly large containers, holding about 3 lbs., are preferable to smaller types. In order to produce a stream rather than a cloud of dust, the usual commercial

duster only needs to be operated in an upside-down position. Attaching a flashlight to the duster assists materially in the operation. Other dusters with somewhat limited use are the foot pump, similar to the pump used in cyanogassing burrows, and the rotary duster.

Every room and all outbuildings are checked for evidence of rats, since they sometimes live in an isolated area where food is available, not straying out for days or weeks. Dust is generously used in rat holes and patches are placed around their periphery. Calcium cyanide rather than DDT generally is used for dusting burrows because this will kill the rat as well as its fleas.

At the present time, all rat control activities in typhus areas are preceded by residual dusting, because of the possibility that infected fleas leaving their dead host may survive to transmit their infection to man. Although DDT dust acts quickly when it comes in contact with fleas, it may be several days before this occurs. For this reason dusting precedes rat eradication measures by at least five days when practical. DDT dust may prove not only to be a good temporary method of controlling typhus but also to be of great advantage in permanent rat control programs along with the other measures.

EVALUATION OF RESIDUAL DUSTING OPERATIONS

The adequacy of DDT dusting is being evaluated by inspection and by trapping live rats before and at various intervals after dusting. Fleas and other ectoparasites are collected, identified, and enumerated and, by determining the flea index (the number of fleas per rat) the degree of control is readily

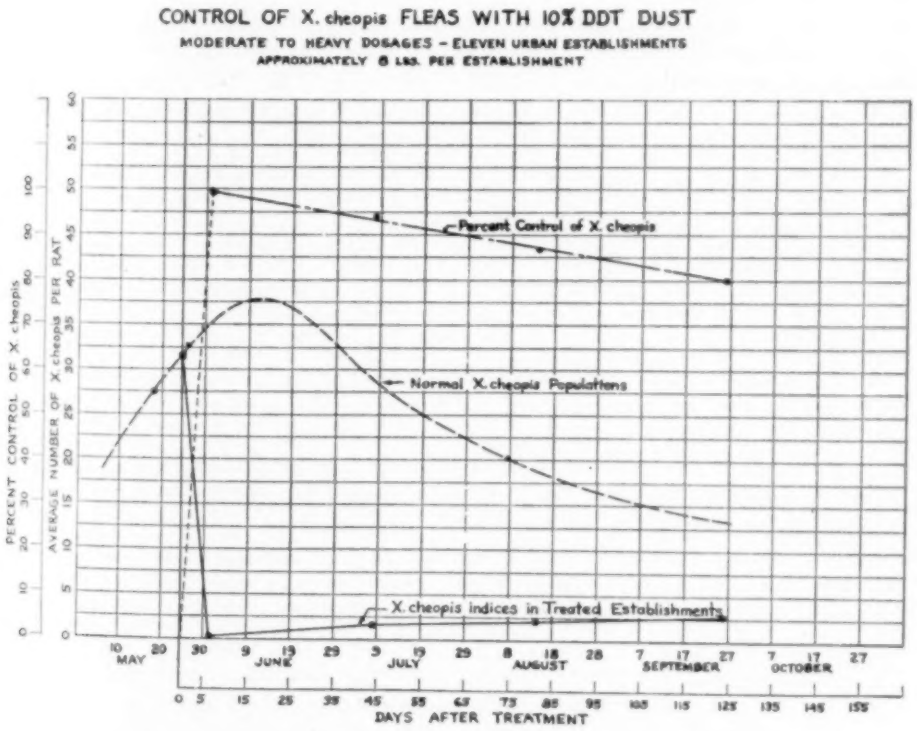

FIGURE 4—DDT has a residual effect in the control of rat fleas.

ascertained. Better than 85 per cent control of rat fleas has been obtained at Savannah for as long as 3 months after dusting. The principal flea in the South is the Indian rat flea, *Xenopsylla cheopis,* which is believed to be the main typhus vector since it is most prevalent during the human typhus season—May throughout October (Figure 4).

To determine further the control of typhus, heart blood specimens are collected from live rats. These are centrifuged and the serum is subjected to the complement-fixation test, a laboratory determination for murine typhus fever.[6] Results of such tests on specimens from the San Antonio dusting program have recently been received. Rats were trapped in two similar areas during September and October, 1945. Premises in one area had been dusted the previous May and June while those in the other area were untreated. Positive complement-fixation tests were recorded for 24.5 per cent of all rats caught in the treated area, and for 46.9 per cent in the untreated area. However, in the new generation of rats, only 4.1 per cent were positive in the treated area as compared to 42.9 per cent of the young rats in the untreated area. These later data indicate that typhus among rats was reduced more than 90 per cent. The adult rats in the two areas showed no appreciable differences; this is to be expected, because, once a rat has typhus fever, it continues to have complement-fixing antibodies in its blood serum throughout the remainder of its life. Thus, although the rat is probably not capable of transmitting typhus for more than a month or two after it becomes infected, it would be expected to give a positive complement-fixation reaction 4 months later.

Since most of the residual dusting activities did not start until recently, it is still too early to determine what effect DDT will have on the human typhus picture. However, the prospects are bright for a substantial reduction in typhus during 1946.

SUMMARY

Murine typhus fever, which has increased from 1,800 reported cases in 1940 to 5,100 in 1945, has become a major public health problem in the South. To combat its spread, the U. S. Public Health Service has assisted ten southern states in providing adequate typhus control staffs in the state health departments, in expanding ratproofing and rat eradication activities, and in inaugurating a new method consisting of DDT dusting to control rat fleas and other ectoparasites. State and U. S. Public Health Service coöperation with other agencies in rat poisoning methods is also being attempted.

Results of rat poisoning activities utilizing the new rodenticides 1080 and, to a limited extent, ANTU have been so successful that the average time necessary to free ratproofed buildings of rats has been greatly reduced. Ratproofing has been improved significantly through the use of more permanent materials and more efficient, economical, and neater construction.

The application of DDT dust to rat runs has demonstrated that excellent rat-flea control can be obtained for periods up to 3 months; and limited data indicate that a substantial reduction in typhus among rats may be obtained by this method. Since general rat poisoning and DDT dusting are temporary measures and ratproofing activities are limited greatly in scope due to the type of structures in endemic typhus areas, all three methods are indicated in a well balanced program. Direction of such a program is provided by the health department as a part of general sanitation activities, but the coöperation of all agencies, public and private, interested in rat control is attempted.

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Race Relations in Community Health Organization

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THE past five years have seen a tremendous growth in interest in race relations matters. Books about the Negro and his problem, some good and some not too good, have been published in increasing numbers; hundreds of citizen interracial committees have been formed and myriads of forums and seminars on the subject have been held. Unfortunately, most of these activities have been concerned with discriminations in employment, housing, schools, and transportation, and little has been said about relationships in matters of health. Yet this is of importance if progress is to be made in eradicating some of the health problems among Negroes. During 1945, the writer, as health consultant for the National Urban League, had the opportunity to participate in a project which made possible certain observations in this sphere. This article is for the purpose of describing this project and to note some of the findings, supplemented in many instances by other observations, which may be helpful to communities which are sincere in meeting the health needs and solving the health problems of the Negro.

DESCRIPTION OF THE PROJECT

The National Urban League, as a result of a grant from the General Education Board, beginning in 1944 formulated and developed a community relations project to be offered to cities which either had large Negro populations or in which relations between the races were not entirely satisfactory, in order to be able to suggest ways and means whereby various aspects of the community pattern could be modified, altered, or eradicated for the good of all individuals within it. The methodology used in this project may be briefly described.

The Council of Social Agencies or Welfare of any city desiring this service makes a formal request to the National Urban League which in turn submits it to a National Advisory Committee created for the purpose and composed of representatives of a selected number of national voluntary health and welfare agencies, such as the National Tuberculosis Association, the National Recreation Association, and the National Organization for Public Health Nursing. After careful study, the National Committee either accepts or rejects this request. On acceptance of the request, the community relations staff then begins its operation. The staff consists of a director and associate director, both trained in social research methods, and five specialists or consultants representing the fields of health, social case work, recreation, and group work, housing, and industrial relations.

The director and associate director go into the community and make an overall survey of various phases of community life, with particular em-

phasis on those which are significant in race relations. This survey generally extends over a period of three to four weeks, and culminates in a report embodying specific recommendations for each of the five fields mentioned above. This report is then submitted for acceptance or rejection to the Council of Social Agencies of the city surveyed. If the findings and recommendations are accepted, either as a whole or with modification, then the five consultants move into the city and spend approximately three weeks carrying out the second phase of the project. The community is approached by each consultant, mindful of the ultimate purposes of the project, namely, to gather pertinent facts concerning the problems of Negroes and services available to them in each of their own specialties; to determine the adequacy and utilization of these services by Negroes; to make community leaders and organizations aware of the various problems involved; and, finally, to suggest possible solutions to them whereby some of these difficulties may be removed or ameliorated, more effective programs developed or existing facilities and services better used by the Negro community.

Thus it is seen that the function of each consultant is not only to supplement the findings of the initial survey but to work out procedures and suggest approaches which will be helpful to the community as a whole. Each consultant then writes a report based upon his study and activities which is also submitted to the Council of Social Agencies. The responsibility for follow-up of the project remains in the hands of the council of each community. In order to arouse interest and give community support to the venture, the Council of Social Agencies in each of the cities so far serviced has formed a local advisory committee of leaders, Negro and white, to represent the more important facets of community life. These local advisory committees have been unusually helpful to the success of this project.

It was agreed by the National Urban League Advisory Committee that only five cities should be surveyed each year, and during the first year of the project, 1945, the request of three cities in the North and two in the South were accepted. These were located in Connecticut, Indiana, Ohio, Oklahoma, and Texas. They varied in population from 45,000 to 600,000, and the percentage of Negroes in each extended from 3 to almost 30. For the second year, 5 more cities have already been listed, located in South Carolina, Missouri, Pennsylvania, Florida, and Oklahoma, and already one of these has been completed.

The responsibility for exploration of the health section of this project has been that of the writer and he has approached each of the six cities so far investigated with the concept that the health problems of every sector of the population of any community are expressions of the health level of the total community, and therefore some idea of the health of the community must be obtained in order to relate the problems of the Negro to it. The methodology which has been used by the health consultant in each of the cities has been simple and may be briefly summarized as follows:

1. The overall initial survey made by the director and associate director was carefully studied in order to obtain a complete picture of the community, to become acquainted with some of the recommendations made, and to discover any gaps or deficiencies in the health section of the report which needed further study.

2. On arrival in the city, a conference was held with the staff members of the Council of Social Agencies and with the health subcommittee of the local advisory group in order to obtain direction about some of the major problems and to suggest the names of indi-

viduals and groups which would be helpful in the prosecution of this work.

3. Thus oriented, the health consultant then launched into a study of the health structure of the city by conferences with representatives of official and nonofficial health agencies and, wherever possible, by inspection of many of the facilities available.

4. Discussions were also held with Negro and white leaders, either in groups or as individuals, about the health problems of their community which specifically concerned them, and formulating or devising with them ways and means whereby these problems might be approached and possibly solved.

5. Before leaving the community, a verbal report was made to the full local advisory committee in order that there would be opportunity for frank discussion about the findings and solutions suggested and that definite plans could be laid for subsequent follow-up.

6. Finally a written report was sent to the Council of Social Agencies to be made available to the various groups and organizations which had been reached so that each of them would be able to study the suggestions and recommendations and continue to work along those lines which they found acceptable.

Much has been written about the numerous health problems of the Negro and the disproportions existing in his mortality rates when compared with those of the white population. All too often the specific environmental causes which contribute enormously to these high rates, such as low economic level, poor housing, low educational status, are not often mentioned. Rarely if ever is mention made of the social patterns of communities and the attitudes of health workers which stand as very definite barriers to the health progress of the Negro. In any program which aims to solve these problems, cognizance must be taken of many of these factors, some of which are rather intangible. Overcoming the tangible ones, such as establishing clinics and health centers, is rather simple, but attacking the intangible ones, such as attitudes and ways of thinking, offers greater difficulties and yet these are the barriers which often prevent full utilization by Negroes of all of the services which are available to them. The discussions which follow deal with both tangible and intangible aspects and are based for the most part on the studies of these six cities. It is highly possible that by some singular coincidence these apply only to the cities in question; however, even if this were the case, these observations may be helpful to official and nonofficial health agencies which are attempting to face squarely and honestly some of the persistent health problems of the Negro.

SOME OBSERVATIONS BASED ON THE PROJECT

1. The study of the cities, North and South, showed that all of them were lacking in certain basic health programs for all of the members of the community, and in only one could it be said that there was a semblance of a well organized official health agency which planned, directed, and coördinated the health activities of the community. In one city of 120,000 population there was no full-time health officer, no public health nursing division, and little in the way of a health education program; in another with 230,000 persons, the responsibility for the health department was divided between two part-time practising physicians and the meager health services which were available were dispensed by a welter of agencies, including the state, local, and county health departments, plus a voluntary health agency and without any coördination between them. In another there were no prenatal or infant hygiene clinics because the practising physicians in the community were opposed to them. Thus it is seen that, whether black or white, members of these communities are suffering from a lack of elemental services. As would be expected, however, in all of the cities the deficiencies in services were much more acute for Negroes than for white individuals. This is more

significant when it is realized that the mortality rates for Negroes for the major group of diseases were higher than for white individuals. This applied with particular emphasis to such services as venereal disease clinics, beds for tuberculous patients, dental health services, health education activities, and services for handicapped children. Much has been said for instance about the high prevalence of venereal diseases in the Negro, and yet in three of these cities the venereal disease program was woefully inadequate, the clinic facilities dilapidated and unattractive, one of these being in an old city jail, and the treatment accorded to Negro patients not always of the highest professional type. In the largest community of this group, with 600,000 population, of whom 120,000 were Negroes, there was only one public venereal disease clinic to serve the Negro population. Another instance of a most glaring deficiency exists in one of the southern cities where sight-saving classes, schools for crippled children with free transportation, and schools for mentally retarded children are available for white individuals, but none for handicapped Negro children. It is obvious, therefore, that if the basic services are unavailable to Negroes who have many more ills, then this group is doubly penalized.

2. It is interesting to note that one of the basic principles of public health practice, namely to provide services in terms of needs rather than on a population-ratio basis, is still being violated when it comes to Negroes. This is not as overt as it was 15 or 20 years ago, but remnants of this practice whereby Negroes are allocated health facilities in terms of population percentage rather than on actual need is still to be seen. This was particularly true in the allocation of beds for tuberculosis. In one of the northern cities with an adequate number of hospital beds to care for the tuberculosis problem, Negroes made up 9 per cent of the population, and only 10 per cent of its beds for tuberculosis were allocated to Negroes, even though the Negro mortality rate was 4 times that of white individuals. In one of the southern cities with a similar differential in the rates, only 20 per cent of the beds were allocated to Negroes, since this was in keeping with the approximate percentage of this group in the population.

3. The coöperation of various portions of the population is important in advancing the health level of any community. This cannot be obtained fully if any group is continually excluded from participation in formulating policies and programs which all too often affect it. This is the case as far as the Negro is concerned in his relationship with official and nonofficial health agencies. In all of the six cities thus far surveyed, most of the voluntary health agencies lacked Negro representation on their boards and therefore they were in the position of making plans and executing programs in which Negroes were involved without the benefits of their point of view. This was true in the case of such organizations as the tuberculosis societies, visiting nurse associations, and crippled children societies. A few of the voluntary agencies attempted to meet this problem by establishing Negro advisory committees to give counsel to the boards of their organizations. This all too often was unsatisfactory because these committees only served to give assent to programs which had already been formulated and discussed by the board. In other words, the Negro committee acted primarily in the capacity of a rubber stamp. The pattern is quite similar in terms of the official health agencies.

If the health problems of the Negro are going to be successfully attacked, all health agencies must come to the realization that they must provide the opportunity for the Negro point of view

to be heard on the same basis as that of white members of the community, particularly in those localities where the Negro makes up a sizable proportion of the population.

A simple example which comes to mind and which shows the importance of having the Negro's point of view in certain matters may be seen in the matter of health literature. Many health agencies have not received the utmost in coöperation from the Negro community because in some of the letters which they have addressed to them and in some of the pamphlets which they have prepared for them, the term "Negro" wherever it has appeared, has not been capitalized. Many Negroes consider this an affront, and quite often develop an antagonistic or indifferent attitude to any agency which makes this seemingly minor error. Negro representatives will also have the additional advantage of developing a strong link with the Negro community, since members of their own race will be better able to interpret to them the activities of the organizations on which they serve. In this connection, a word of caution should be sounded. Negroes who are chosen to serve on the boards of these agencies should not be selected merely because they are conservative and easily accept the point of view of the white members of the board, but rather because they are leaders in the Negro community, face problems with objectivity and realism, and are not at all hesitant in expressing their considered opinion. In too many communities such individuals are tacitly barred from most of the agencies and labeled trouble makers.

4. The voluntary health agencies have contributed immeasurably to the health progress of this nation, but it is becoming apparent if we are to judge by recent publications, that some of their policies, programs, and attitudes are in need of examination. There are two of these which may be noted here as they have been observed in these six cities; one applies to the community as a whole and the other specifically concerns the Negro population. In all of these communities it was noted that these agencies continue to hoard, as it were, those services and programs which they initiated many years ago but which now rightfully belong in the official agencies, and thereby they have become a hindrance in the progress of good city health administration. In two of the communities, for example, the whole tuberculosis control program was being administered by the tuberculosis societies and they were loath to relinquish these responsibilities to the health departments, although at least one of them was in a position to accept this without any deleterious effect on the existing program.

The second has to do with the attitude of voluntary agencies to the health problems of the Negro. Too many of them have established Negro divisions within their organizations, often with one Negro worker in such a unit to handle all of the phases affecting Negroes. It would appear that the time has come to employ Negroes in each of the various divisions of any health organization serving Negroes. For instance, if an agency has divisions in adult health education, rehabilitation, and medical services, it certainly would be more sound administratively to employ competent Negro staff members in each of these units than to have an additional division concerned with Negro work. Aside from its administrative soundness it would help in race relations, since it would provide greater opportunities for trained professional Negroes and thereby serve as a source of encouragement to Negro youth throughout the land. In passing, it may be said that this pattern of having a Negro division has been adhered to rather strongly by many national

voluntary and federal health agencies.

5. The opportunities for employment in health agencies, voluntary and non-voluntary, for Negro professional persons are still rather meager. The only type of Negro professionally trained persons employed with any degree of consistency in all of the six cities was the public health nurse, and even here it was not always done in numbers commensurate with the Negro case load of the agency or the Negro population of the community. This was seen particularly in the southern cities where these nurses had responsibility for the major share of work with Negroes. In one of the southern cities with 25,000 Negroes in the population, only 2 of the nurses were Negroes, while in another with 125,000 Negroes, only 6 of the nurses were colored. Thus the health education, supervision, and other services which nurses are able to give are not available to Negroes in these cities.

Other than these nursing opportunities, the health agencies offer little in the way of employment of physicians, dentists, sanitary and food inspectors, health educators, and medical social workers. Yet many public health authorities have stressed the desirability of employing Negroes wherever large numbers of this racial group are handled, since they appear to be able to establish better rapport with these patients, and thereby contribute to better case holding and improved race relations. In the consideration of this fact, three items should be emphasized.

First, the idea is not being advanced here that Negro professionals are the only ones who can treat Negroes any more than that only white professionals should handle white individuals. Obviously the training received by a Negro public health nurse at one of our major universities prepares her to care for patients of any racial group; however, cognizance must be taken of the fact that in certain sections of the country, racial separation exists and Negroes are generally employed to care for their own.

Second, the same standards of training and experience should be used in determining the qualifications of Negroes that are used for white individuals. Last, the same salaries and similar opportunities for advancement should be provided. It is a well known fact that in the South Negro teachers receive less compensation for their services than white teachers, but this also obtains in health and welfare agencies, although not to as great an extent as in the former group. For instance, in one of the southern cities surveyed, the Negro nurse serving in the same capacity as white nurses in a voluntary health agency were receiving less pay. Unfortunately also for most Negro public health workers, is the fact that the opportunities for advancement are practically nil. This was well shown in all of the six cities visited. It is the belief of the writer that public health as a career will not attract the best of Negro physicians, dentists, and others because there is the realization on the part of these individuals that, once they accept this type of job, they are doomed to remain at the level in which they start, while they watch white persons, perhaps of less proficiency, advance to positions of responsibility and higher salaries. This is one of the important problems which will have to be faced if progress is to be made in this area.

6. The availability of hospital beds for Negroes, both general and special, is one of the more pressing problems of this racial group. In five of the six cities, two in the South and three in the North, the ratio of hospital beds to Negro population was much lower than that for whites, and generally less than the accepted standard of 5 beds per 1,000 population. The bed ratios for Negroes in each of these five cities were

3.1, 2.6, 2.5, 3.8, and 2.4. In addition, the facilities which are allocated for Negroes, particularly in the southern cities, were not equal in quality to those provided for white patients. For instance in one of the hospitals in a southern city, all of the Negro patients were placed in the basement of the hospital and, during the inspection of this institution, the writer noticed a 2 year old child with bronchopneumonia who had been admitted that day, being treated in the hallway because there were no other facilities available in the basement, although empty beds were seen in other sections. In a hospital of another city, not in this group under consideration, Negro women patients are placed in an enclosed porch where there is neither electric light nor heat.

The lack of hospital beds for special conditions is also acute as far as the Negro in these cities is concerned. This is well seen in the case of tuberculosis and maternity beds. In five of the six cities the number of beds for the care of Negroes with tuberculosis fell far below the ratio of 2 beds per death, so that there were long waiting lists with too many tuberculosis patients scattered in homes throughout the city. This is even more alarming when it is considered that Negro homes are generally overcrowded.

In one southern city, the one with 120,000 Negroes and only 24 beds for Negro tuberculous patients, not only was the number inadequate but those available left much to be desired. During the inspection trip of this hospital it was noticed that 2 Negro patients in the moderately advanced stage of the disease were smoking outside the building, although at the time, there was a downpour of rain. The lack of maternity beds is well shown in one of the northern cities where 98 per cent of the white mothers were delivered in hospitals, as compared to only 60 per cent of the Negro mothers. Negro mothers in this industrial city would have gladly gone to hospitals if such facilities had been available. Thus we cannot talk too glibly about these important health problems of Negroes if such deficiencies in facilities for care continue to exist.

The plight of the Negro physician in relationship to the hospitals in these six cities is even greater than the deficiency in hospital beds. In all of the cities except one, Negro physicians were barred from the staffs of all of the hospitals, whether private, municipal, religious, or nonsectarian in type, and not even courtesy privileges were available to them. This practice has two very deleterious effects on the health of the community and indirectly on race relations.

First of all, Negro physicians who have patients needing hospitalization must turn their patients over to white physicians on the staff of the hospital to which they are admitted and thereby lose the opportunity to follow these cases to their termination, and in some instances, lose some of these patients to these white physicians.

Second, affiliation with a hospital provides the physician with the best opportunity for continuous professional education, since he is able to improve in skill and knowledge and keep abreast of the advances which are taking place. Thus the stultification of Negro physicians not only in these but other cities plays an important part in blocking health progress of Negroes. Negro physicians have attempted to remedy this situation by building their own private hospitals, but unfortunately in many instances these institutions are only high grade convalescent homes and lack many of the facilities, equipment, and services associated with large modern hospitals.

7. Negro physicians in the North are able to belong to the county and state

medical societies and therefore become members of the American Medical Association. In the South, including the District of Columbia, this is not possible and so about 2,000 Negro doctors in this area are barred from the scientific seminars, lectures, and clinics which are sponsored by these societies. This source of professional advancement, as in the case of hospitals, is denied them. The Negro physician who wants to keep up must journey either to the North or to short postgraduate institutes which have been developed in some of the Negro hospitals in the South, or which have been sponsored by the National Tuberculosis Association through their state and local branches. A similar situation incidentally obtains in the case of Negro dentists.

8. The attitude of white health officials and health workers in their relationship with Negroes and their health problems as observed in these cities was of much interest. First of all, it was noted that in many of the public health clinics Negro patients were often treated with condescension, lack of sympathy, without respect and dignity, and without attention to many of the minor details for personal comfort and privacy which are so conducive for developing interest and concern about their condition and which is so much needed by those attending such clinics. Second, a number of public health workers had the attitude that Negroes can get along with less than white individuals, and therefore can use to advantage what has been found to be inadequate for the white community. Third, a few health administrators were afraid to face whatever suggestions Negroes had to offer, even though based on sound administrative practice, because they did not want to effect changes too quickly and were content to move on at a snail's pace. These attitudes which belong in the realm of the intangibles are just as inimical to the health problems of the Negroes as those which can be measured by definite standards and yardsticks.

CONCLUSIONS

These observations are presented in the hope that they may be helpful to health agencies which are sincerely interested in improving the health of the Negro. Many times these agencies have continued to carry their program in a set and stereotyped manner, believing that they are achieving results because they can point to statistical summaries of many meetings held, literature distributed, and injections given. Often they have not stopped long enough to evaluate their activities in terms of the groups which they are serving. This is done quite often without malice or forethought, but rather because it is easier to follow accepted channels, and public acclaim is fuller when its thinking and the pattern of action are least disturbed. Yet many health workers are desirous of finding a better way. It is commendatory to note that most of the health workers in the cities surveyed with whom the writer had contacts discussed these problems frankly, were desirous of formulating plans to overcome them and already some have reported definite progress. In the city in Indiana, the president of the county medical society has discussed with the board of directors the possibility of admitting Negro physicians to the scientific sessions of the society. In the city of Oklahoma, the voluntary health agency has already set aside funds for the employment of a Negro health educator and two Negroes have been appointed to its Board of Directors, while the superintendent of one of the private hospitals has already begun discussions with members of the Negro medical society concerning their admission to the staff of his institution. In the city in Texas, the salary of Negro nurses

in the visiting nurse association has been increased to the level of that of white nurses. These are not by any measure startling accomplishments, but changes do not take place overnight and, even if this were possible, it might not always be desirable. Yet they are steps in the desired direction in race relations, and gains will continue to accrue if a flexibility in attitude and manner of thinking and a desire to achieve continue to prevail.

The Use of Color in Industrial Safety

At the request of the War Department, the American Standards Association prepared the *American War Standards Safety Color Code for the Marking of Physical Hazards and the Identification of Certain Equipment,* which was approved by the Association in July, 1945. The purpose of the standard is to establish the use of specific colors for marking certain pieces of equipment and parts of buildings with identifying colors in an effort to reduce injuries. At present, red is used to identify (a) fire protection equipment and apparatus, (b) danger, and (c) stop.

Yellow is used for caution and a marking of physical hazards. Green is used to designate safety and the location of first aid equipment. Black and white or a combination of these two are used for housekeeping and for traffic markings. The experience of the U. S. War Department in using such identification paints indicates a promising place for such procedures in the reduction of industrial accidents. Safety records of 26 Quartermaster Corps and Army Service Depots show that certain types of accidents were reduced from a frequency of 46.14 to a yearly average of 5.58, while others were entirely eliminated after the standard colors were put into effect. One Depot estimated that during the first year after adoption of the code, disabling injuries were cut from 13.25 to 6.99 per each one million man hours worked.—*Industrial Standardization,* July, 1946, American Standards Association.

Health Education Program in Puerto Rico

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PUERTO RICO is a very beautiful Island in the Caribbean which has much the same problems as are found in the southern part of the Continental United States. However, the situation here is more acute because it is aggravated by density of population, monoculture, and poor economic resources with all of the concomitant problems. Really to learn about the Island, one must live here as a member of the community for a sufficient length of time to appreciate this land of contrast—so beautiful yet so marred by human tragedy.

THE PROBLEM UNFOLDS

In January, 1944, a health educaton consultant was assigned to the U. S. Public Health Service, District No. 6, which includes Puerto Rico and the Virgin Islands. During an intensive study of all health education activities being carried on by the various agencies on the Island, it became apparent that there was great need for an overall plan to embrace the chief agencies whose programs carry the responsibility for health education. By providing such a program, long-term planning could be done through coördinated effort, and a better understanding could be secured of all available resources.

While this intensive study was being made, the health education consultant became acquainted with the personnel in the federal, insular, and unofficial agencies, and observed their programs and grew more familiar with the problems affecting the people of Puerto Rico. It became evdent that certain conditions prevailed which should be taken into consideration in developing a plan. The Insular Departments of Health and Education each make their own policies, control the budgets, and supervise their own local programs. There are very few unofficial agencies which carry on an educational program. An Island-wide program for health education would have to be geared to the limits of the Insular budgets for the above named departments. The interests of other agencies, therefore, in addition to the Departments of Health and Education, should be enlisted so that they, too, might become participants in an Island-wide program while at the same time they would be enriching their own services. All agreed that a pressing need existed for a long-term health education program geared to reach the Island's two millions.

HOW THE PROGRAM EVOLVED

In 1942 there was organized a Joint School Health Committee composed of members from the Departments of Health and Education, which met regularly to discuss the many problems arising during the development of school health programs. Out of these meetings, there came the recommendation that more functional school health policies be developed. Finally by the early part of 1945 the tentative school health

policies were completed by a small working committee and were approved by both departments. These policies then were ready to be used as a pattern by the local communities in developing their own policies.

During the summer of 1944, a workshop was held under the auspices of the War Emergency Program, Nursery School Division, and the University of Puerto Rico, for about sixty nursery school teachers from all over the Island. Much preliminary planning was done to make health education functional throughout the program. Already many improvements have resulted from this workshop. Concurrently, there was offered a series of ten public health lectures based on the leading health problems of Puerto Rico. These lectures were given under the auspices of the Student Service Board of the University of Puerto Rico and were sponsored jointly by the Insular Department of Health and the U. S. Public Health Service.

Then, an opportunity came for the consultant to serve as visiting professor of health education at the School of Tropical Medicine, Department of Hygiene. Here health officers, public health nurses, sanitary engineers, sanitary inspectors, and laboratory technicians are enrolled. Most of these persons will be employed by the Department of Health which is financing their training through fellowships. Therefore, it was essential to make their pre-service health education functional as well as to imbue them with the philosophy of joint planning; teamwork in carrying out plans; and of evaluating the programs continuously. The Puerto Rico School Health Policies were introduced into the curriculum for the first time.

Additional progress was made when a Health Education Section was organized in the Puerto Rico Public Health Association and, after its second year, became a permanent section of the Association.

BIRTH OF A PLAN

As an outgrowth of all of these activities, a request came to serve as health education consultant to the Insular Department of Health, the Insular Department of Education, and The University of Puerto Rico. These three agencies felt the need for further development of their health education programs then in operation. In the Department of Health, there was an Office of Health Education with a chief under whose direction a silk screen artist worked; in the Department of Education, there was only one supervisor of health education for the entire Island; while the University of Puerto Rico did not have a health education program, *per se*.

After much individual consultation with those in charge of these programs and with their administrators, it was decided that an overall plan should be developed to meet the problem. A small representative committee was appointed to develop the long-term plan. It was to be based upon the needs and available resources in Puerto Rico, geared to the modus operandi of all three agencies, with the intent to include other agencies as the plan expanded.

THE TEN YEAR PLAN

The special committee appointed to draw up the long-term plan agreed upon the following points: To

1. Start with a ten year plan so that subsequent planning could be projected from the tenth year into the future.
2. Incorporate in the plan all agencies whose programs bear responsibility for health education.
3. Provide for a coördinating committee with members from all participating agencies and institutions so that overall planning can be accomplished.
4. Determine the administrative set-up for the programs of all agencies.

5. Work out job analyses for the health educators to be employed by all agencies.

6. Assist the agencies in planning budgets to include the following items: training and salaries for health educators, secretaries, and others as needed; equipment; visual aids; books; printing; supplies; maintenance; and other operating expenses.

7. Determine the standards and procedures for recruitment of all trainees who will become health educators.

8. Establish in The University of Puerto Rico a training program, both on the undergraduate and graduate level, of health educators for all types of positions, after the Island-wide program has become firmly established.

9. Begin the program based on the ten year plan only after full administrative support has been guaranteed by the agencies concerned and by the Government of Puerto Rico.

10. Provide for continuous evaluation of the programs of health education in all agencies and revise these programs in the light of findings.

After the committee had worked out the plan tentatively, it was presented to the District staff of the U. S. Public Health Service for consideration and individual study prior to a general staff meeting. The plan was approved and given full support by individual consultants in their subsequent working contacts with all agencies. As a result of thorough understanding of the plan, there was less conflicting and diverse advice given by various consultants whose programs involve health education, and the staff of the District Office gained through their teamwork.

As the next step, the plan was submitted to representative members of the Departments of Health and Education and the University of Puerto Rico for study. Final acceptance was given by each agency which directed the committee to put the plan into action.

PRELIMINARY STEPS FOR ACTION

Conferences were held with special agencies to interpret the Ten Year Plan for Health Education. It was necessary for these agencies to comprehend the philosophy and scope of the plan and their relationship to it, not only because of the need for future participation, but also because some of their employees would probably become candidates for the health education fellowships. The problem offered by recruitment of personnel for any new program is a serious one on the Island as the number of qualified persons is relatively small and the well established programs usually suffer a loss of personnel to the new programs. However, it was hoped that those in administrative positions in the agencies affected could take the long-term viewpoint and be reconciled to any loss of personnel through the hope of enrichment and additional assistance to their own programs upon the return of the health educators.

THE PLAN IN ACTION

THE DEPARTMENT OF HEALTH

Work was begun first with the Insular Department of Health. In its annual plan, provision was made for a complete reorganization of the Office of Health Education so that it came under the administrative direction of the Division of Public Health rather than under the Commissioner's Office as heretofore. The Division of Public Health is one of the three main divisions in the department; the other two being, the Division of Public Welfare and the Division of Hospitals. Based upon the conditions prevailing and according to the requirements set up in the plan, it was decided that during the first ten years five or more health educators would be trained each year, so that the positions to be established in the Office of Health Education, in the five Public Health Administrative Districts, and in the Public Health Units in the towns in the districts, could be filled. In this way the health education programs could be administered, at the Insular level and at the local level, effectively. A map of Puerto Rico was used in planning the distribution of the health educators

so that each would not have to be concerned with a population of more than 40,000. The towns in each District were grouped according to carefully considered criteria.

A well organized recruitment program was started and personal interviews were given to all who were selected from the total number applying. A committee of three representing the Insular Department of Health, the P. R. Civil Service Commission, and the U. S. Public Health Service was responsible for the selection of trainees. The educational qualifications for health educators as established by the Committee on Professional Education of the American Public Health Association were used as a basis for interpretation to the applicants to be interviewed so that they would have some idea of the type of program they would develop upon their return. A tentative salary scale was set up and discussed as were the possible places of assignment. An earnest effort was made to select trainees who had the type of personality for the work and a real desire to perform the duties of a health educator. Before final notification was given, the efficiency rating of those chosen was discussed in conferences with their employers.

Six trainees were sent to the University of North Carolina on fellowships from grant-in-aid funds in the fall of 1944, and an additional trainee was sent in June, 1945. In the fall of 1945, six more trainees were sent to the same university.

During the first year that the trainees were away, considerable work was done to set up job descriptions for the positions to be filled by the Department of Health. This effort was carried on by the Department of Health, the P. R. Civil Service Commission, and the U. S. Public Health Service. Final acceptance was given by the Commission in 1945. Classifications were worked out for Health Education Supervisor, Health Education Editor, Visual Aids Specialist, Senior Health Educator, and Health Educator.

Then, in the fall of 1945, six of the trainees returned with Master of Science Degrees in Public Health with a major in Health Education. These health educators took the civil service examinations and as soon as they were certified by the P. R. Civil Service Commission, they were assigned to their respective positions. The Health Education Supervisor and the Health Education Editor are working in the Office of Health Education with the silk screen artist already on the staff. The four senior health educators are assigned to four of the five administrative public health districts. These districts center around the cities of San Juan, Arecibo, Ponce, Mayaguez, and Caguas. The fifth district will wait for its health educator to be selected from those returning in the next group. As additional persons are trained, they will be certified as health educators to work in the public health units in other towns in the districts under the guidance of the Senior Health Educators. The latter are working closely with the personnel at the Insular level to initiate the intensive community health education programs.

Before the health educators arrived, a meeting of the five District Medical Supervisors was called by the Director of the Division of Public Health to discuss the Island-wide Health Education Program, and particularly the work of the Senior Health Educator according to the Civil Service Commission's job analysis. Then, when the Senior Health Educators arrived and were assigned to their districts, conferences were held in the public health unit to which assignment was made. The group included the District Medical Supervisor, the Medical Officer, the Health Education Supervisor, the Health Education Consultant of the U. S. Public

Health Service, the Director of School Hygiene of the Bureau of Maternal and Infant Hygiene, and the Senior Health Educator. These meetings were of vital importance in the inauguration of the new program. Instead of beginning programs throughout the district at one time, the Senior Health Educator has been loaned to the public health unit in one of the towns in the district. The work is developing first in the neighborhood area around the experimental school selected by the Department of Education in which to develop a functional school health program through the joint participation of both departments. From this neighborhood area, the program will spread to encompass the entire town. Later, as more Health Educators are at work in the Island, the Senior Health Educator will assume her duties at the district level.

Movie machines, films, slide projectors, mimeograph machines, mimeoscopes and books, are among the most important items already bought for the districts to be used in the local programs.

An advisory council was organized by the Office of Health Education. It consists of the chiefs of all the bureaus in the Division of Public Health and any other representatives they wish to include, plus representatives from the other two divisions in the department of health. This council meets monthly at the time that the health educators and field technicians come in for conferences so they can attend these meetings also. The council was organized for several purposes:

To interpret to the members of all bureaus the programs which the health educators are developing and to show how the programs of the special bureaus can be included in the total community health education programs.

To have each bureau responsible for one monthly meeting so that its program can be discussed and shared with all other bureaus and divisions.

To devise ways for more joint planning and more joint participation, and for inclusion of representatives from other insular and federal agencies.

To secure the advice of the council members on health education matters.

THE DEPARTMENT OF EDUCATION

The Department of Education subscribed to the principles of the Ten Year Plan and recruited five well qualified persons according to the same criteria used by the Department of Health. It was decided to place these five health educators, upon their return, in the school systems of the same five towns with the Senior Health Educators of the Department of Health. Thus, the two can work as a team since the problem of health education in the schools necessitates the full time of a health educator who can plan with the community health educator to make the school health program on integral part of the total community program. The salary scales and titles were worked out in conformity to Department of Education regulations and are compatible with the standards set up by the Department of Health. A committee of three worked up a job analysis for the position of field technician in health education. All applicants for fellowships were interviewed personally, at which time an interpretation of their work was made according to this job analysis.

In the fall of 1944, these five trainees were sent to the University of Michigan for training on fellowships jointly financed by the Departments of Health and Education, and have returned with Master's degrees in Public Health. Before their return, a meeting was held at the Department of Education with the superintendents of schools in the five towns where the field technicians were to be assigned. This meeting had

the same purposes as that held by the Department of Health.

The programs have been started in an experimental school in each town through joint planning of staffs of the school, the public health unit, and others, as needed. The Puerto Rico School Health Policies are being adapted to use the available scientific personnel in the community in relation to local situations and resources.

The in-service training in these experimental schools is centered in a course affiliated with the University of Puerto Rico, so that those who have registered in the course for credit will receive two semester hours credit upon its successful completion. The total faculty in each experimental school is participating. All health educators and field technicians met several times with the health educators at the university before the course began, to go over their syllabuses and to agree on general principles. In this way the two programs, pre-service and in-service, are being enriched from the ideas and experiences of all. Subsequent meetings will be held during this term.

By the opening of schools in September, 1946, it is hoped that the school health program can be started in each experimental school with all personnel adequately prepared. Continuous guidance will be given to the experimental school during the year. Additional schools will be added to the experimental program in each of the five towns so that the personnel can be given the accredited course in health education before the school health program is initiated. Thus, the plan will proceed until all schools in the town will have been reached. Constant improvement should result from this type of locally supervised program.

The health educators are working with those in charge of school lunchrooms throughout the Island both at the insular and local levels. The lunchrooms are being considered an integral part of the total school health program, and food handling courses for school lunchroom personnel in the experimental schools are being conducted.

In the fall of 1945, five more trainees were sent to the University of Michigan where they are at the present time. An advisory committee has been organized for the Department of Education also and has had one meeting. This committee is made up of representatives from the various departments involved in the program. Its objectives are similar to those of the advisory committee of the Department of Health. All health educators of all participating agencies attend both advisory council meetings.

THE UNIVERSITY OF PUERTO RICO

The University of Puerto Rico set up two positions in health education. One position is for a health education coordinator who will not only be responsible for pre-service health education in all of its phases, but also for integration of the program throughout the total university curriculum. The second position is that of a health educator on the Board of Student Services where a closer working relationship can be developed between student services of all types, where individual health guidance can be given students relating to the follow-up of medical and dental services, and where the students' problems of housing, recreation, and nutrition can be attacked through joint planning. The university sent two carefully selected trainees to the States for graduate study on university fellowships and plans to extend the health education program as rapidly as possible. In line with the expansion, additional trainees will be awarded fellowships for graduate study in health education.

Progress has already been made toward integrating health education in

the different departments through faculty planning. There are about 300 student-teachers enrolled in the pre-service courses in health education in the College of Education, and about 100 teachers enrolled in the in-service courses being given in the experimental schools in the districts. The work has started in individual health guidance for students and they themselves have asked for a student health committee which is already at work. Many more demands are coming for assistance in health education than the two health educators can meet.

THE SCHOOL OF TROPICAL MEDICINE

The School of Tropical Medicine became the next participant in the plan. A job analysis was made so that a broad health education program could be developed in line with that which has been evolving in this school. A fellowship in health education was awarded to Puerto Rico in 1945 by the National Foundation for Infantile Paralysis. A trainee was recruited for this award, and is now studying in the University of North Carolina. Another trainee will be sent by the School in the fall of 1946.

OTHER AGENCIES AND INSTITUTIONS

The Polytechnic Institute of Puerto Rico, a private Christian educational institution, set up a plan for including a health educator on its staff. This person was selected and is at present studying health education at the University of North Carolina.

The Farm Security Administration came into the plan next. Another fellowship from the National Foundation for Infantile Paralysis was awarded to Puerto Rico and was given to the person recruited for a position to be set up in the Regional Office of Farm Security Administration. This person is studying at the University of North Carolina, also.

The next agency to participate in the developing plan was the Agricultural Extension Division which sent one of its own personnel to the States for graduate study in health education. She has returned and is serving as health education specialist for the staff and field personnel of the Extension Division.

THE ISLAND-WIDE COÖRDINATING COMMITTEE

The ten year plan calls for a coordinating committee to be made up of health education representatives from all participating agencies so that joint planning can be done through regular monthly meetings. A chairman who will serve for one year and a vice-chairman have been elected. The vice-chairman will fill the chairman's place at the end of the year. Through these meetings, plans for health education to be carried out by all the agencies are so well coördinated that the programs have unity and an overall strategy. Also through this coördinating committee, ideas and experiences can be exchanged, new materials can be brought to the attention of all, and duplication of effort eliminated. This committee will serve as a clearing house for any outside requests that may give an opportunity for planning broad programs jointly. The meetings are planned for the same time as those of the advisory councils and those of the health educators. This results in only one trip for the field workers.

Since the Island-wide coördinating committee is at the present time made up of all the health educators, subcommittees have been established to develop materials on the main health problems. The Health Education Editor of the Office of Health Education is serving as the key person to correlate this work.

Before materials are mimeographed or printed, they are checked by the

Research Division at the University of Puerto Rico to make certain that they are adapted to their purposes. Since over 60 per cent of the population of Puerto Rico has had only about one and a half years of schooling, this is a most important aspect of the work of this committee. Three simple Spanish pamphlets have been completed to date and will be tried out in the five experimental centers before they are printed for Island-wide distribution. All agencies are privileged to use the same pamphlet and will bear the expense of printing the quantity they require.

All materials being prepared for teachers' and pupils' use are being worked out in collaboration with the respective curriculum committees of the Department of Education.

Future Steps in the Plan

Two other agencies have made plans for assigning health educators to their staffs. The P. R. Department of Labor is going to add a health educator to the staff of its Bureau of Publications and Workers Education. The P. R. Housing Authority is going to attach a health educator to its central staff and will add others as quickly as their housing projects are completed.

Trainees will be recruited and educated on fellowships to become health educators for the two positions mentioned above as well as to fill the yearly quotas for the Departments of Health and Education. It is planned that fifteen more Puerto Ricans will be sent to the States in the fall of 1946.

In accordance with the plan, progress is being made in evolving a program for training future health educators in Puerto Rico. It is believed that after the Island-wide program has been in operation for about four years, this training can be initiated. The School of Tropical Medicine through its Department of Hygiene will grant graduate degrees in public health with a major in health education. A curriculum will be set up based upon the job analyses for all types of health educators needed, and active participation will be given by the University of Puerto Rico and all other agencies active in the Island-wide health education program. There are sufficient qualified faculty members in both institutions together with professional persons on the Island to give the basic scientific and academic preparation needed. Then, in the local public health units, there will be health educators who have assisted in the development of community health education programs to give the supervision for field work in this area. In each of these same communities there will be field technicians in health education who can give the necessary supervision in the area of school health. Field experience can be enriched by the work of all agencies on the Island. By having the entire training program planned through group participation in the Coördinating Committee, the trainees should be able to get twelve months of very excellent postgraduate academic and field work that has unity and cohesion. This plan will have an added advantage because the work will be based upon problems the trainees will face when they go into their own positions. From a practical standpoint, the field training will be orientation for their future positions. Also there will not be the acute problem of adapting Continental standards and problem solutions to situations which are very different here in Puerto Rico. Because the cost of training future health educators will have to be carried by insular agencies, the expense is an item to be considered also. Training health educators here will cost considerably less, so that more teachers and personnel of other agencies can study health education either by working toward a graduate degree or by taking special courses offered in the

curriculum which would help them to perform their work more intelligently.

EVALUATION

The evaluation of this program is being carried on continuously in all advisory council meetings, conferences for health educators, and coördinating committee meetings. By this means the growth of the program can be assured.

By the fall of 1946, there will be twenty-eight health educators with graduate degrees working throughout the Island. Upon this group rests the responsibility for laying a firm foundation for the work of those who join the ranks in the future. Only because of the broad vision of the Department of Health in taking the leadership in initiating such a far reaching program, and the farsightedness of the other agencies and institutions in sharing in it, could so much have been accomplished in less than three years. Progress was made possible because of the excellent coöperation of the individuals in these agencies to whom the credit really belongs. The blueprint was carefully drawn, the foundation has been laid, and the structure is being built through the sincere and wholehearted effort of all. Future progress is contingent upon the full support of administrators in the participating organizations and the Government of Puerto Rico. It is hoped that through the Island-wide Health Education Program, more health and happiness can be brought to the people of this beautiful island in the Caribbean.

Conference on Blood Programs

The U. S. Public Health Service, in coöperation with the Conference of State and Provincial Public Health Laboratory Directors, has called a Conference on Blood Programs to be held in Washington September 16–18. The Conference will cover the numerous problems connected with blood programs and will summarize the recent experience in the past.

Laboratory directors who are now carrying on blood programs or plan to launch them in the near future are being invited.

Dr. Roy F. Feemster, Chairman of the Conference of Laboratory Directors and Director of the Division of Communicable Diseases of the Massachusetts State Department of Health, asks that suggestions for subjects to be discussed or papers to be contributed be referred to Dr. G. F. Meadors, States Relations Division, U. S. Public Health Service, Bethesda, Md.

Modern Treatment of Syphilis*

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THE modern treatment of syphilis is still in the experimental stage and only a very rash or ignorant prophet would presume to declare at this time what the best treatment will prove to be within the next few years. The first great innovation in the treatment of syphilis since the introduction of arsenical drugs by Ehrlich occurred less than a decade ago when Hyman, Chargin, and Leifer [1] introduced the rapid treatment of early syphilis by a continuous intravenous drip. Modifications of the somewhat troublesome technique of the intravenous drip followed rapidly, but no method of quick therapy with arsenical drugs is without its dangers.

At Bellevue Hospital we found that serious arsenical reactions could be reduced to a minimum by combining mapharsen with bismuth and fevers induced by typhoid vaccine.[2] The addition of fever made it possible to cut in half the total dosage of mapharsen necessary for fairly adequate therapy of early syphilis when fevers were omitted. Prior to the introduction of penicillin, a single daily injection of about 1 mg. of mapharsen per kg. of body weight for 10 days combined with four fevers induced by typhoid vaccine and three injections of 0.2 gm. bismuth salicylate in oil, proved the most satisfactory rapid treatment of early syphilis in our experience at Bellevue Hospital. After numerous trials with other methods of massive arsenotherapy, the combination of mapharsen, fevers, and bismuth became an established routine with us. Several thousand patients with early syphilis were so treated with a far lower percentage of serious reactions than with any other method of rapid treatment with arsenotherapy. Nevertheless, we had 2 deaths attributable to this plan of therapy and we lived in constant fear of occasional serious reactions.

Apart from the threat of arsenical reactions which were reduced to a minimum in a 10 day treatment, such statistics as have been published by the U. S. Public Health Service [3] indicated that the treatment with mapharsen, fever, and bismuth gave the best therapeutic results in the follow-up of rapidly treated patients reported to its central tabulating agency prior to penicillin. In spite of its risk, the advantages of this therapy for the more or less irresponsible type of clinic patient far outweighed its disadvantages, and there is no question in my mind that everyone interested in the treatment of syphilis owes a debt of gratitude to the men who were responsible for introducing a quick method of therapy and to the New York City Committee appointed by former Commissioner of Health Rice for its further investigation.

The introduction of the intravenous drip for massive arsenotherapy paved the way for further developments of rapid treatment and permitted the accumulation of knowledge without which the prompt inauguration of penicillin therapy would have been greatly handi-

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capped. First of all, massive arsenotherapy, in spite of its potential dangers, showed that early syphilis could be treated more satisfactorily in a relatively brief period than over a period of many months. This statement has been challenged and probably will still be challenged by some. But when one considers that in the clinics throughout the United States not more than 10 per cent of the patients with early syphilis completed the recommended therapy, and that the Cooperative Clinics [4] reported in 1929 that 43 per cent of patients with primary and secondary syphilis who had irregular treatment over a period of 9 months developed infectious relapses, the value of rapid therapy cannot be questioned. Nor is there any evidence that patients who achieve negative serologic tests following rapid therapy and who remain sero-negative over a period of 2 years are more prone to relapse than patients who received 2 years of the older conventional courses of treatment. Such patients may be reinfected, but there is little evidence that a significant number relapse or go on to develop the more serious lesions of late syphilis if they are sero-negative 2 years after treatment. This does not mean that we can afford to neglect the possibilities of later developments. Every effort is being made at Bellevue Hospital to keep patients who are given rapid treatment for early syphilis under observation for life, if possible. This is manifestly an impossible ideal to attain for the majority of clinic patients, but we are still following at Bellevue Hospital several hundred cases treated more than 4 years ago.

In addition to establishing the practical possibility of treating syphilis rapidly, the introduction of rapid methods of therapy added greatly to our knowledge of what to expect after such therapy. It required the introduction of rapid therapy to awaken clinicians to the importance of quantitative serologic tests for syphilis. I lack the time to discuss the many reasons why quantitative serologic tests are an invaluable aid in the management of syphilis, but I assure you that I no longer consider it possible to treat syphilis properly without the aid of such tests. The fact that they are not more readily available to physicians is a great handicap and should be remedied. My own knowledge of syphilis in all stages has been increased greatly by the use of such tests. I now consider them as essential in the treatment and follow-up of patients treated for late syphilis as for early syphilis. I think time will prove that all stages of syphilis can be treated rapidly more effectively than by the older conventional plans of weekly injections, but we must have quantitative serologic tests if we are to accumulate adequate evidence for this. I have found that the study of quantitative serologic tests for syphilis in large groups of patients, followed up for years, affords invaluable information and also stimulates one to greater thought because it raises questions which have been previously recognized but forgotten by most busy practitioners.

Thus the experience with massive arsenotherapy and the introduction of routine quantitative serologic tests for syphilis afforded an essential background to the rapid development of the use of penicillin. The fact that the Public Health Service promptly seized the opportunity of aiding controlled experiments with rapid therapy, prior to the introduction of penicillin, served to hasten the accumulation of knowledge both as to its dangers and therapeutic efficacy, and, most important of all, it prepared the way for introducing a relatively non-toxic drug which could at once be put to effective use in the war emergency. Within a few months following Dr. John Mahoney's discovery of the spirocheticidal action

of penicillin in early syphilis and his apparently successful treatment of a few cases, controlled experiments on a large scale were under way under the sponsorship of the National Research Council. Owing to the background of previous experience with rapid treatment, penicillin could be introduced by the armed services much sooner than would otherwise have been possible.

As one who recognizes the dangers of bureaucratic control over the practice of medicine, I doubt if anyone can honestly question the outstanding contribution of the public health authorities to the recent advancement in the treatment of syphilis. It was the New York City Department of Health which first made it possible to investigate the discoveries of Chargin, Leifer, and Hyman at Mt. Sinai Hospital with respect to massive arsenotherapy. This investigation was conducted under controlled conditions, under the supervision of a committee of physicians appointed by Commissioner Rice. It was the U. S. Public Health Service which fostered the further development of rapid treatment and made it possible to collect the necessary data as to its dangers and effectiveness. It was Dr. John Mahoney, a Senior Surgeon in the U. S. Public Health Service, who, on his own initiative, discovered the effectiveness of penicillin in treating syphilis at a time when penicillin was so scarce that he had to make his own product in order to carry on the investigation. It was the National Research Council, through its Subcommittee on Venereal Diseases, which at once began to exploit and develop Dr. Mahoney's discovery by carrying on investigations through the coöperative efforts of some twenty different clinics and institutions. In this investigation the Public Health Service rendered valuable aid and, in January, 1946, it replaced the Office of Scientific Research and Development as the sponsor for carrying on future investigations. These are contributions of the highest order in the fight against syphilis.

In any large scale development of a new treatment which has to be supported by public funds there is always the temptation to neglect the quality of work for the sake of quantity. This, to a certain extent, is inevitable in the rapid treatment of early syphilis where large numbers of poor and frequently irresponsible individuals must be cared for. The treatment can be given as outlined, but the long range investigation of the results of treatment is extraordinarily difficult. This is especially true in a time when syphilis is on the increase. It was to be expected that total war involving most of the world would increase the incidence of syphilis many fold. In large areas of Europe and Asia this has undoubtedly happened. America was fortunate in escaping the disastrous effects of war waged on its own soil. Nevertheless, the incidence of infectious syphilis has mounted steadily in the United States during the past year and it would unquestionably have risen far higher had it not been for the efforts of the public health agencies. Confronted with an emergency such as the war, it was essential that every case of infectious syphilis be treated as rapidly and effectively as possible. Ideally, every such case should be followed up for years after treatment, and careful records should be kept on each case. Practically, such a nation-wide program was impossible, regardless of how many directives were issued urging that it be done. The first essential was to find as many infectious cases as possible and treat them promptly. Owing to the availability of rapid therapy, this has been done, both in the armed forces of the United States and in the civilian population, as never before. Without this therapy the future would be much blacker than it is so far as syphilis is concerned.

Nevertheless, as previously stated, the modern treatment of syphilis is still in the experimental stage. This means that the quality of investigation must be kept at the highest possible peak in at least some centers. It is vastly more practical to choose a relatively few stations for this intensive investigation than to spread the clinical research so thin that authoritative knowledge will never be available. The entire medical profession, and hence the public, will gain by thorough, carefully controlled, long-range research which is carried on intensively in a relatively few places. The results of these carefully controlled studies can be made available to all. To the credit of the Public Health Service this fact has been recognized and, in taking over the sponsorship of future investigation, formerly conducted under contracts with the Office of Scientific Research and Development, there is every reason to believe that the Public Health Service will not overlook the need for the highest possible quality of research. Mass treatment and thorough research can both be carried on but not in every treatment center. It is important that this be kept in mind or quality will inevitably be sacrificed for quantity. There is still much to be learned about treating syphilis with penicillin which cannot be determined by mass treatment alone.

The dosage of penicillin required for apparently good results in early syphilis has been fairly well investigated, but the number of days during which treatment should be given for the best results is still an unknown factor. We now know that in early syphilis aqueous penicillin should be given every 3 hours for at least 60 doses, over a period of 7½ days. The same total dosage when divided into 30 doses, each injection being given every 6 hours, will not be as effective as when given every 3 hours. But no one knows what would be the effect of giving relatively large doses of penicillin every 6 hours for a period of 15 or 20 days. Perhaps that would be as effective as more frequent injections given over a shorter period. In other words the time factor in the treatment of syphilis with penicillin still requires a great deal of investigation.

At Bellevue Hospital we have learned that the time factor is of considerable importance in treating neurosyphilis with penicillin. Treatment must be conducted over a considerably longer time than in early syphilis. We are now giving 40,000 units of aqueous penicillin every 3 hours for 150 doses to patients with neurosyphilis. This requires almost 19 days but it has proved more effective than when patients were treated in 10 to 14 days. As devices for slowing the absorption of penicillin are worked out, it may well be that penicillin can be given to ambulatory patients, and possibly we may find that, like arsenical drugs, if treatment is extended over a long enough period, less frequent injections will be as effective as more frequent ones given over a brief period. This possibility, however, does not excuse the physician who today persuades syphilitic patients to take penicillin once or twice a week in his office. With the knowledge now available, that kind of treatment is inexcusable quackery.

As long as patients have to be hospitalized for treatment with penicillin, it is economically important to shorten the period of treatment to as few days as possible. So far, the 7½ day period seems to be the minimum necessary for reasonably satisfactory results. In that period of time the best results in our service at Bellevue Hospital have been attained with 20,000 units of penicillin dissolved in water, injected every 3 hours for 60 doses, combined with 8 daily injections of 0.04 gm. mapharsen. At present we are investigating the use of penicillin in beeswax and peanut oil by giving daily injections of 600,000

units a day for 8 days. So far this treatment has been well tolerated, except for a few reactions of severe urticaria associated in two cases with fever lasting for several days. The quantitative serologic tests of patients treated with penicillin in beeswax and oil have been coming down satisfactorily, but the investigation of this therapy was started too recently to compare it as yet with other regimens.

Without going into more detail, it can be said in general that penicillin has proved a tremendous boon in the treatment of syphilis during the war emergency. While penicillin is no panacea, and some patients who have received it for early syphilis are certainly going to develop the late manifestations of the disease because of their failure to keep under observation, one cannot stress too greatly the advance that this new weapon represents in the struggle against *Spirochaete pallida*. Only those who have been on the alert against the dangers of massive arsenotherapy can appreciate fully the advantages of a relatively non-toxic, yet effective drug for use in rapid treatment.

But in spite of this new aid to the treatment of syphilis, and in spite of any new treatment that may still be discovered, syphilis is not likely to be controlled through effective treatment alone. It is becoming more evident every day that the dream of eradicating syphilis in a generation is a pipe dream, and little more than a pious hope, if we are dependent entirely upon effective methods of therapy. A continued program of educating the public is imperative. No disease yet has been controlled entirely by treatment, and syphilis is far more complex and difficult to eradicate than most infectious diseases. Both the psychological and social factors which favor promiscuity and poor sexual hygiene require investigation if we are to get at the roots of the spread of syphilis. It is obvious that poverty and individual carelessness or irresponsibility are important factors in preventing the lowering of the reservoir of infectious syphilis. But there are undoubtedly less obvious factors at work than those which are now so well known, and the time has come when a more profound study of the epidemiology of syphilis is needed than the mere tracing of sources and contacts of infection.

Further research in the immunology of syphilis is also needed, both for our understanding of the disease and for its more effective control. The need for this has been lost sight of recently in the excitement over newer methods of treatment, but some investigators will have to return to this obscure and difficult problem. These are a few of the tasks which lie ahead in the program for the future control of syphilis. They will require the sponsorship and help of public health agencies for years to come. It would be a mistake for anyone to think that the struggle against the spirochete of syphilis will come to a victorious conclusion merely by discovering ever more effective bombs for its destruction. Nevertheless congratulations are in order for the progress that has already been made and for the wisdom of the plan for the future.

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Refrigeration in a Food Control Program

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THE important part good food refrigeration plays in a food control program cannot be over-emphasized; in fact, its position is outranked only by the food itself and by handlers who prepare and serve it. Innumerable instances are on record where lack of refrigeration or failure to utilize available facilities properly has been an important contributing factor in outbreaks of food poisoning. This article will discuss certain features of refrigeration with which the food sanitarian and the public health worker should be familiar.

Food refrigeration has for its primary purpose the preservation of food by arresting metabolism, bacterial growth, and enzymatic action. While control in all three instances contributes to the healthfulness and palatability of food, the one of most importance in food sanitation work is that relating to the control of bacterial growth through low temperatures. With the advent of mechanical refrigeration, temperature control has been greatly improved to a point, in fact, where mechanically operated boxes are so common that their presence and function in a food store or restaurant is sometimes taken for granted. Such a concept should be avoided, since even the best equipment through lack of care alone may become inefficient and fail to accomplish its intended purpose. Bearing upon this point is the result of a survey of three hundred restaurants made by the author, in which refrigerator temperatures in 26 per cent of them exceeded 50° F. Therefore, a component part of each food establishment inspection should be a careful determination with an accurate thermometer of the temperature maintained in every refrigerator where perishable foods are stored. Not only is such a check valuable from the public health viewpoint but it will impress upon the proprietor the importance of refrigeration and offers an opportunity to emphasize that his refrigeration equipment must be correctly maintained and adjusted properly to meet effective temperature requirements. While 50° F. is generally accepted as the maximum allowable temperature for the storage of many perishable foods, a temperature several degrees lower is both preferable and desirable. Table 1 shows the recommended retail storage temperatures in degrees F. for a variety of foods.[7]

From this table it can readily be seen that in a large majority of cases a refrigeration temperature below 50° F. is recommended; in fact, for fresh meat a range of 35–40° F. is recommended, and for poultry 29–32° F. These data emphasize that the type of food under refrigeration is largely the determining factor for proper temperature, and that a single temperature standard which fails to appraise the kind of food being refrigerated is not a sufficient criterion.

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TABLE 1

Recommended Retail Storage Temperatures in Degrees F.

Fresh Fruits	*Degree F.*		*Degrees F.*		*Degrees F.*
Apples	38–42	Dates	55–60	Oranges	50
Avocados	40–45	Figs	40–45	Peaches	50
Blackberries	42–45	Gooseberries	45–50	Pears	40
Cantaloupe	45–45	Grapes	40	Pineapples	50
Cherries	40	Grapefruit	50	Plums	40–45
Cranberries	40–45	Melons	40–45	Raspberries	40–45
Currents	40–45			Strawberries	42–45
Fresh Vegetables					
Artichokes	45	Celery	45–50	Peas	40–45
Asparagus	40	Corn	45	Peppers	40–45
Beans	40–45	Cucumbers	45–50	Potatoes	36–40
Beets	45–50	Eggplant	46–50	Potatoes, sweet	55–60
Brussels sprouts	40–45	Endive	45–50	Radishes	40–45
Broccoli	40–45	Lettuce	45	Rhubarb	45–50
Cabbage	45	Mushrooms	55–60	Spinach	45–50
Carrots	40–45	Okra	40–45	Sauerkraut	36–38
Cauliflower	40–45			Tomatoes	45–50
Meats					
Bacon	36–40	Hams	36–40	Pork	36–40
Beef	38–42	Lamb	36–38	Poultry	29–32
Bologna	36–40	Liver	36–38	Sausage	36–40
Corned beef	36–40	Lard	40–45	Tongue	45–50
Chicken	35–40	Mutton	34–42	Veal	36–40
Other Products					
Beer	45–48	Swiss	40	Lobsters, boiled	36–40
Bread	46–50	Whole milk	34–36	Lobsters, live	39–45
Cheese		Chocolate	60–65	Milk	40–45
Brick	30–35	Cider	46–50	Molasses	45
Cheddar	36–38	Cream	40–45	Oysters	32–35
Cheshire	38–40	Dough	46–50	Oysters, opened	23–30
Limburger	42–44	Eggs	38–45		
Neufchatel	50–52	Fish, fresh	25–30		
Roquefort	39–41	Honey	45–50		
Skim milk	48				

A second point of interest to the food sanitarian is the amount and kind of refrigeration available and how it is used. While no standard ratio of refrigerated space to volume of meals served daily has been developed, due to the many kinds of restaurants and stores with their variety of merchandising methods, it is of interest to note the several types of refrigerating systems which may be used in a single restaurant. Classified, they are as follows [1]:

1. Drinking water and beverage cooling.
2. Storage of meats, fish, vegetables, and dairy products. In this case the size of the restaurant generally determines whether all products are held in one refrigerator or whether separate boxes are maintained at different temperatures for each class of food.
3. Manufacture and storage of ices and frozen desserts.
4. Making of bulk or cube ice.
5. Making and storage of candies in certain types of restaurants.
6. Storage of ingredients for a baking department.
7. Refrigerated cafeteria displays.
8. Frozen food storage cabinets.

Judging the adequacy of refrigeration requires an intimate knowledge of the kind of business conducted plus frequent observations of the refrigeration equipment under conditions of practical use. Failure, for example, to provide adequate low temperature refrigeration for fresh meat because a box is used for general purpose storage and opened fre-

quently with resulting temperature fluctuations and increases would point to the need of additional equipment devoted to meat storage alone. When sufficient facts and data have been accumulated, inadequacies should be pointed out to the proprietor and recommendations made for correcting such deficiencies as may be found.

Closely allied with adequacy is, of course, the question of effective use. Certain practices reduce the efficiency of refrigeration, in turn affecting the food. These should be noted by the food sanitarian and advice given to avoid them. Food should not be stored on top of cooling units or on the drip pan below the unit, since such a practice restricts air circulation and may contribute to frosting of the unit. Refrigerator shelves should not be covered with paper, linoleum, or similar material, since this causes stagnation of air, creates excessive sweating of products, and increased operating expense.[5] The storing of fresh meat so there is a complete circulation of cool air around it is to be recommended. Hooks upon which meat is hung in storage refrigerators should be of the movable type to allow proper spacing of meat to avoid contact, one cut with another. Placing large amounts of food in a single container should be avoided, since cold air will not reach the innermost layers rapidly and refrigeration will thus be delayed. For the same reason sliced meats should be stored in layers not exceeding four inches.

The possibility of contamination reaching the refrigerator and its contents should be investigated. Drains from refrigerators should not be piped directly to sewer or waste lines. There should be a break in the line so that drainage from the refrigerator will go to a small sink or open hopper and this fixture trapped and properly sewer connected. This precaution is necessary to eliminate the possibility of sewage backflow reaching the refrigerator. In lieu of such an approved drain connection, water-tight drip pans may be used.

In addition to these points there is the cleanliness of the refrigerator to be considered. Observation quickly reveals the condition of side walls, trays, racks, doors, gaskets, and fixtures. The refrigerator, must, of course, be given a thorough cleaning at frequent intervals with warm water containing a good detergent. Wiping the interior of the box after it has been cleaned with a cloth moistened in a bactericidal solution is to be recommended. For deodorizing, charcoal hung in net bags will absorb odors. Gaskets which are worn and door fittings and hardware in poor condition should of course be replaced or repaired to make all doors tight fitting.

The increased use of ultra-violet light, especially in meat refrigerators, is another matter of interest to the food sanitarian. The question of using ultra-violet light as an adjunct to refrigeration is quite controversial; therefore, its limitations as well as some beneficial effects claimed for it should be recognized. Ultra-violet light in conjunction with refrigeration is used mainly as an inhibitor to microbic growth, since the germicidal value of radiations of the mercury spectrum at wave length 2537Å is known to be effective. The best bactericidal lamps emit about 80 per cent of their radiations at this wave length.[2, 3] If initial infection and bacterial surface contamination on meat is low, ultra-violet light is an effective means of destroying organisms present. One writer has suggested that destruction is accomplished if initial infection does not exceed 1,000 bacteria per sq. cm. Ultra-violet radiation produces a slight coagulation of meat surfaces sufficient to reduce evaporation or shrinkage materially, reduction amounting to several per cent. Higher relative humidities, also a fac-

tor in reducing evaporation from meat, can be maintained when ultra-violet light is used, but humidities of about 90 per cent without radiation involve, after a few days, surface infection by bacteria or mold or both with subsequent loss from trimming.

Reduction of air-borne infection and removal of objectionable odors from cold storage boxes is also claimed when ultra-violet light is used. Ozone, having germicidal properties, is produced in low concentrations when ultra-violet light is used. Radiations below 2000Å will convert a portion of the oxygen to ozone and if bacteria are in single layers on food surfaces and not covered with organic material, 1.5 p.p.m. in 3 to 4 hours kill 99 per cent of the bacteria and 0.5 p.p.m. 90 per cent.[4]

Appraising the use of ultra-violet light further, we find several limitations. One of the first is that initial infection and surface bacterial contamination be low. The number of layers of living or dead bacteria on the surface being radiated is a determining condition of control.[6] Experimental work has demonstrated that effective bacterial destruction does not occur when more than two layers are present or when organisms are protected by organic matter. Ultra-violet rays have little penetrating power so that even very thin films of dirt or moisture may shield the microorganisms from the damaging effect of the radiation. "A film of beef juice 0.2 mm. thick reduced the intensity of ultra-violet light a thousandfold." [8]

The question of rancidity must also be recognized. Butter, cream, lard, and fat sausages exposed to direct radiation will become rancid and must be protected by storing in a covered container. Fats of fish likewise are adversely affected by short wave lengths of light and by ozone. The ozone generated in the presence of ultra-violet light is of exceedingly low concentrations, at most a few tenths of 1 p.p.m. of air, and its germicidal value cannot be considered particularly significant unless the exposure time is a substantial number of hours. Layers of bacteria and organic matter also reduce its bactericidal powers.

Another limitation involves meat surfaces that are in the shade or are shielded from the direct line of radiation. Even surface destruction of microbic life is not accomplished when such surfaces are outside the line of radiation, although advocates of radiation have claimed that ozone will reach these surfaces and destroy organisms. However, a moderate air movement is necessary to accomplish this and slowly moving air is not provided in all refrigerators where ultra-violet light is installed.

In some cases operators have been led to believe that higher refrigerator temperatures could be used safely when radiation was employed. For the several reasons mentioned above, this is of course erroneous and even though higher temperatures and high relative humidities have been used in a certain commercial tenderizing process, both have been carefully supervised by trained technicians, and more than ordinary controls provided. To attempt either tenderizing meat or preserving it on the premise that ultra-violet light is the main factor in control is a mistake and should be so recognized by the ordinary user.

Because refrigeration is one of the important and essential factors in the proper care and handling of perishable foods, it deserves careful and regular attention on the part of all food sanitarians. High standards of operating efficiency and maintenance should be emphasized to assure maximum benefits in terms of safe wholesome food.

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Arthritis Research Center

The National Arthritis Research Foundation on July 16 announced a campaign to raise $2,500,000 for an arthritis research center in Hot Springs, Ark. Studies would be carried on of the causes and cures of arthritis which is "one of the leading and one of the least known and most neglected of the chronic diseases." At the luncheon announcing the campaign, Dr. Willard Squires of New York Hospital called arthritis the "stepchild of medicine" because no physician likes to care for arthritis patients. Dr. Thomas Parran reported that 3,000,000 persons in the country are suffering from arthritis and another 4,000,000 from other forms of rheumatoid diseases, or more than the number suffering from cancer, tuberculosis, heart diseases, and diabetes combined. He declared that the new research center would help to overcome the deficiencies in facilities for early diagnosis and treatment and for undergraduate and graduate training in this specialty.

Hot Springs has been selected as the site for the center because of the natural hot waters there and the large source of clinical material available from the thousands of sufferers who go there for the baths, the favorable climate, the proximity of the Army and Navy General Hospitals and of the Levi Memorial Hospital. The officers of the Levi Hospital and public health officials organized the Arthritis Research Foundation in 1945.

The fund campaign will be formally opened on October 7. Chairman of its National Board of Sponsors is Lionel Barrymore who has been confined to a wheel chair for many years as an arthritis sufferer.

What Good Are Health Museums?

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HEALTH museums are distinctly different from medical museums. The emphasis in medical museums is on professional education; health museums are for lay education. Medical museums feature disease; health museums aim at better health for more people, health being understood as being physically and mentally at ease.

The forerunners of health museums were the museums of hygiene of the last century. One of the earliest ones was Parkes Museum of Hygiene founded 1876 in London, better known (since 1888) as the Royal Sanitary Institute. In the same year a National Museum of Hygiene was opened in Washington. The emphasis in these museums was on environmental sanitation, bacteriology, and communicable diseases. The German Hygiene Museum in Dresden has generally been recognized as having developed two distinctive features: regarding subject material, human biology was made the focal exhibit; regarding technique, preference on three-dimensional models, animation and visitor participation. Its collection "Der Mensch" culminating in the "Transparent Man" has become world known in professional and interested lay circles. This is now a thing of the past—the Museum was completely destroyed on February 10, 1945, by fire following an air raid.

The United States was very slow in developing health museums. Evart G. Routzahn's leadership in health exhibits, especially in travelling exhibits, is well known. But before World War I, the use of museum methods for health education was not thought of as advisable or practical, in spite of good experience in many European countries. One exception was the American Museum of Natural History in New York City. Here, in 1912, with Dr. C.-E. A. Winslow as curator, the first museum exhibit on public health was opened. To the dismay of some of the curators, the exhibit was very popular, drawing something like 500,000 people. The Museum also was host to the National Tuberculosis Exhibit.

After the end of World War I, many groups began to think and plan for the establishment of health museums in the United States. A great step forward was the creation in 1930 of the Committee on American Museum of Hygiene by the American Public Health Association. Dr. Victor G. Heiser was its first chairman. Homer N. Calver has been the secretary of this committee from the beginning. In the *Proceedings of the Dedication of the American Museum of Health* at the New York World's Fair in 1939, Calver has traced the many steps leading up to that event. The Oberlaender Trust of the Carl Schurz Memorial Foundation, under the leadership of Dr. Haven Emerson, one of its board members, and Dr. Wilbur K. Thomas, its director, was instrumental in securing $50,000 worth of duplications from the German Hygiene Museum. This material was first on display at the New York Museum of Science and Industry in the winter of 1937–1938, and later made up the main exhibits of the "Hall of Man" at the New York World's Fair. An important addition was the first public showing of the Dickinson-Belskie collection of sculptured models on human reproduction by the Maternity Center Association. These models are now the

property of the Cleveland Health Museum.

If attendance figures can be taken as a yardstick of "success" the 11½ million visitors in two years at the New York World's Fair is a degree of success it will be hard to duplicate. Unfortunately, World War II interrupted the transferring of the exhibits from temporary quarters to a permanent home.

Health museums are nothing less than science museums specializing in human biology, personal and public health. They are a natural bridge between preventive and curative medicine. As is the case with all science museums, health museums are made; they are manufactured—they are not collected. Ours is supposed to be "the age of science"; thus many forget that medicine is science and art, and so is education. One can teach people scientific facts, but education for healthful living calls for familiarity and appreciation of all the arts man has developed.

There are disadvantages in using the word "museum" which for too many people sounds like "mausoleum." Other names have been suggested. The Russians call their museums "Houses of Health." The term "Health Academy," or "Health Institute," has been proposed. The last name makes confusion with commercial enterprises too easily possible. Somebody who goes all-out for community organization will come along with "Community Health Education Center." We feel that the designation "Health Museum" correctly states the purpose, and has appeal for those not reached by the usual channels of health education.

A health museum could be rightly called a "Museum of Man." We are interested in public health education in the human estate of our nation. Social anthropology has made great strides in the last twenty years. Its findings should be combined with those of human biology and psychology. Both have too often disregarded man's status as a member of a family. Medicine is slowly learning again that the patient is not only a person but also has a family. We know that after a child has had a guided tour of the Museum with his class, some weeks later the whole family will study the exhibits. The young married couple expecting the first baby is a frequent visitor with us.

The improvement of personal and public health depends on the application of the findings in human biology. The better we know the nature of man the better we can—if he wants us to—take care of his needs. Hygiene is nothing other than applied biology. Of course, organization is necessary but what really counts is the organism, in our case, the human organism. Health museums are ideal places in which to introduce man to himself. We can visualize health museums with not a single exhibit on disease—disease information being at present 75 per cent of our practised health education. Such a museum would center its exhibits around normal growth and development from embryo to puberty, with an introductory exhibit on heredity. Exhibits would culminate in "education to family life" dealing with all phases of human reproduction. It would naturally include nutrition, mental hygiene, physical fitness, recreation, etc.

Museums are recognized as places where one can see what he has up to now only heard about. Museums make people come, stop, look, listen and, last but not least, remember better what they have learned when the occasion comes for practical application. Museums are respected as places where one can find unbiased information, where nobody tries to sell anything other than true facts. Museums are the people's university. What is true for museums generally, is true for health museums. It is hard to make

preventive services or public health visible; even the protective activities of a health department are hard to picture. Medical services have their hospitals as visible expression; public health can be symbolized by a health museum. The public health movement needs a concrete expression of its ideals and methods strong enough, visible enough, not to be obscured by the "advertising smoke screen" of commercial concerns. There is no doubt that the existence of such an institution is a continuous reminder of the importance of health. We know that many of the 220,000 people daily passing the Cleveland Health Museum by street car start to think about a personal or family health problem through seeing the signs telling about special exhibits, from "Care of the Feet" to "Live Long and Like It."

Health education in this country is mainly financed by voluntary agencies through contributions by the people themselves. There is no doubt that we need and will have an increase in health education activities made possible by tax sources. But experience has shown that even in those countries where health and medical services are available on a national scale, private agencies of health education are needed and are effective.

The organization of a health museum has the advantage of making new financial sources available. Many millions of dollars used for medical and health exhibits at the Chicago, New York, and San Francisco Fairs are good proof. An example on a small scale is the Cleveland Health Museum. During the two years prior to the opening of the Museum an active membership campaign was carried on by the Board of Trustees and the members of an "Advisory Council." The start of this campaign was a community conference called by the Academy of Medicine in the spring of 1936 to discuss the necessity of a "Museum of Health and Hygiene" and the ways and means of securing the needed money. It was felt that, besides the need of large gifts in form of endowments, individual membership was necessary to lay a good foundation—for moral as well as financial support. Nearly 800 physicians, dentists, and interested lay people pledged at least a $10 membership with the reservation "payment is not due on this pledge until the Trustees have declared that we have sufficient funds for successful operation." Very few of those who pledged had ever seen a health museum. If there is such a thing as "selling an idea," this is a striking example. Ninety-eight per cent of the pledges were paid in full at the opening in November, 1940. The campaign was successful only because it answered a real need which in Cleveland had two sources: the Academy of Medicine was anxious to replace its sporadic program of Sunday afternoon lectures, radio programs, and newspaper articles by a more continuous form; and the voluntary health agencies wanted more visual education material and did not want to depend on material available only from commercial sources. Continuation of program, long-range planning, lay participation, emphasis on visual means, are the main advantages of a health museum.

If one accepts "stimulation of public action" and "individual participation in preventive health activities as the principal objective of health education" (Mayhew Derryberry) a Health Museum can be very useful. Public action in a democracy is possible only with proper advance education of the public. Here are some examples:

Three years after the opening of the Cleveland Health Museum, the Bureau of Health Education was reëstablished by ordinance of the Cleveland City Council in the Division of Health, having been out of operation for more than

20 years. We are in no position to judge whether there is a cause-and-effect relationship between the two events, but such is the belief of some of our friends.

The Museum's annual pollen count during August and September, widely published by newspaper and radio, has established ragweed as a source of trouble and has instigated the demand that something should be done about air pollution. This, we hope, will lead to proper action by the city, the mayor of Cleveland having just appointed an advisory committee on air pollution, of which the author is a member.

As another example of "individual participation," the Golden Age Hobby Show might be mentioned. At the request of the Cleveland Welfare Federation, the Museum designed a popular exhibit on geriatrics under the title "Live Long and Like It." Co-sponsored by the Cleveland Press, a hobby and handicraft show augmented the educational exhibits with 235 exhibitors; minimum age for participants was 65 years—the oldest being 89 years of age. More than 1,200 items were on display. It was the general opinion that this participation has helped in "mental rehabilitation" of the aged. So successful was the project, its annual occurrence is felt to be an obligation. The "Search for the Living Norma" with nearly 4,000 women participating, will be described on another occasion.

Being a museum does not mean that operation is restricted to the usual visual means such as exhibits and films; all other media and methods of health education are used, be it the printed word or the radio, the lecture or the discussion. To our own surprise, the Museum's exhibits are increasingly used in professional training, from the schools of cosmetics and embalming, to the schools of nursing and medicine. Two summer courses for students of public health and public health nurses have been conducted at the Museum.

How costly are health museums? Generally speaking, exhibits are no more expensive than any other medium used in health education. We have very little real cost accounting in health education, but there is agreement that the minimum production cost for sound motion pictures, such as those originated by insurance companies, cost in the neighborhood of $20,000. For the same amount of money, an old mansion on Cleveland's main street was remodelled for museum purposes, and most of the exhibits on display were designed and constructed.

The sceptical colleague will ask, "and how do you measure your results?" If we go by an accepted museum yardstick (one dollar per visitor) we hold our own and even better. But the quality of our educational effort cannot be measured by quantitative means. Doubling our attendance might mean diminishing educational returns. Appraisal on the basis of budget has also only limited usefulness. If one doubles the budget in the first five years, as we have done, it might be taken as a sign of growth and acceptance by the public who, after all, pay two-thirds of our expenses. The discrepancy between services requested and services rendered might be a real yardstick. But, which requests are legitimate for a voluntary agency and which ones should be rendered by a public agency? There is no instance in which health museums have been supported by tax funds in this country. However, operation by state health departments is quite reasonable, and even desirable, especially if there are provisions for extension and loan services.[1, 2]

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Appraisal Forms and Sanitation Standards Used in the Michigan Community Health Project

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THE Michigan Community Health Project (MCHP), initiated in 1930, is a coöperative undertaking of the W. K. Kellogg Foundation with state and local agencies and the people of seven rural counties in Southwestern Michigan.* During the early period of health department work in the MCHP each public health engineer had to develop his own standards and prepare his own inspection forms. While this provided a maximum range for ideas and individual initiative, it also allowed many glaring differences in the requirements for various items. Such concepts as adequate ventilation and lighting, where no law or criteria were set up, usually varied with the different engineers. These variations in ideas led to confusion in the field. Establishments in one county would receive a "good" rating for conditions that another county would not approve. When it was decided to use the MCHP area for student training activities, the weakness of the procedure became even more obvious. Such words as "adequate," "sufficient," "abundant," etc., had to be interpreted to each student if anything approaching a uniform standard of appraisal was to be maintained, even within a single county.

Even though laws and state regulations covered many aspects of sanitation, a considerable amount of detail was left to the judgment of the engineer or the sanitarian. Moreover, it was difficult, if not impossible, for any one person to know and retain all these laws, codes, and standards. A sanitarian would find himself often in doubt as to the correct answer, and would discover that he needed continually to make use of a rather large reference library. Many times he would not know where to look to find the answer.

There was need for a working compilation of sanitation standards based on the best information available. Such standards would not be expected to answer all the questions that might come up in the field. There would always be room for the staff worker to use his initiative and knowledge to adapt standards to field conditions. What was needed was a tool with which to iron out the wide variations between the judgments of public health engineers.

To attack this problem, the engineers from the seven counties held meetings with the Consultant in Public Health Engineering of the W. K. Kellogg Foundation. After considerable discussion and study of each item of sanitation, they drew up a field manual which represented the pooled judgment of the group, based on their experience in this area, as well as the factual material available at the time. The field manual included standards on resorts, schools, dairy farms, dairy plants, food, meat,

* Allegan, Barry, Branch, Eaton, Calhoun, Hillsdale, and Van Buren Counties

and industry. Examples of resource material used were: for milk sanitation, the U. S. Public Health Service code of interpretation, milk bulletin from the City of Baltimore, and other bulletin material from agricultural colleges; in resort sanitation, the Michigan Department of Health rules and regulations; for meat sanitation, the U. S. Department of Agriculture meat regulations; for the item of water supply, the standards developed by the state sanitary engineers and adopted by the Michigan Department of Health.

It was decided to have three standards for each item (good, fair and poor). Some believed that an operator should be encouraged to do better than just comply with a regulation—that credit should be given for going a step beyond what was usually accepted as passable. The question might be asked as to whether there is any middle ground. Others believed that a situation is either good or poor, right or wrong, complies or does not comply. This was true with a few items; for example, an air space heater on a pasteurizer vat, either there is one or there is not. But in most cases conditions exist that were acceptable but not of the best. In planning for a new installation, the better standard would be recommended. For example, on milk equipment, stainless steel is better than tin-coated copper, but both are acceptable. In all cases where there was a specific state law or regulation covering a given item, the criteria were set up so that non-compliance with the legal requirement would result in a "poor" rating.

The standards were arranged in three columns. The first column stated the recommended standards by items and was titled "good." The standards in the center column described acceptable conditions and were titled fair." The "poor" column listed conditions that were less than "fair." Symbols were placed between the caption of the items and the standards for the purpose of locating the check mark as determined on the field inspection. These symbols were arranged in three vertical rows and corresponded to the "good," "fair," and "poor" columns of the standards. Each standard was decided upon separately, with no thought as to the weight or public health significance it might have in the overall rating of the establishment.

When the "good" column and the "fair" column included recommendations that were ahead of the community, they were given less weight so the influence on the establishment's rating would not be affected too greatly. For example, under the item "Type of Toilet," a "good" rating required a flush toilet; "fair" could be obtained with a septic toilet; but a privy would be rated "poor." However, when due weight was assigned to all items, it was possible to have a privy and still get a "good" establishment rating.

The following are two sample items on dairy farm sanitation from the manual (Table 1).

After the standards for the items were agreed upon, a color grading system was developed to weight each item according to its public health importance. Formerly a system of percentage points was used which deducted a certain number of points for each item found to be poor. There were several obvious weaknesses in this system, one being that an important item might be poor, yet the amount of points that could be assigned to the item would not be enough to reduce the total percentage points to a low figure. A scoring system was needed that could place enough weight on any given important item to reduce the entire establishment rating to "poor" if it were a public health hazard. Such a system of scoring was devised by using colors in place of points. Colors in the symbols referred to above, showed

TABLE 1

		Good	*Fair*	*Poor*
2. HEAT-VENT.	G G W □□□			
a. BARN	G W R ○○○	No condensation. No. offensive odors.	At least 400 cu. ft. per animal. Fairly free from odors.	Rank, putrefactive odor, condensation.
		Windows tip in at top or adequate inlet and outlet ducts equipped with controllable dampers or adequate exhaust fan used when cows in barn.	Sliding windows or ducts without dampers or inadequate. Hay or silo chute used as ventilator shaft.	Not adjustable; fixed. No ducts. Exhaust fan not used.
b. MILK HOUSE	○○○	No condensation or offensive odors.		
		Adjustable top and bottom or sliding windows or tip in at top or ducts equipped with controllable dampers or exhaust fan.	Ducts without dampers.	Condensation or putrefactive odors. Not adjustable; fixed or no ducts or no exhaust fan.
3. LIGHTING	□□□			
a. BARN	○○○			
Windows	o o o	4 sq. ft. per 100 sq. ft. of floor area. Clean. Located for good distribution.	2 sq. ft. per 100 sq. ft. of floor area. Fair distribution.	Less than 2 sq. ft.; obscured.
Elec. Fixtures	o o o	3 foot candles at milking area. Permanent electrical.	1–3 foot candles. Other artificial. Movable.	None or less than 1 ft. candles.
b. MILK HOUSE	○○○			
Windows	o o o	Window area 10% of floor area. Windows clean.	Windows are 5–10% of floor area. Fairly clean.	Less than 5%. Not clean.
Elec. Fixtures	o o o	10 f. c. on work surfaces.	3 to 10 f.c. Not electric.	Less than 3 f.c. of artificial light.

G = green; W = white; R = red.
All squares are green, green, white.
All circles are green, white, red.

the public health significance of one item as related to the others. The colors in the small circles are used to rate the larger circles or lettered items. The colors in the large circles are used to rate the squares, or numbered items, and finally, the colors in the squares are used to determine the total establishment rating. The sanitarian could place the check marks in the proper symbol while making the field inspection and after the items were checked it automatically placed the weight on the total rating. By the use of colors it was possible to place a controlling weight on any given item. This system provided a method that made it easy to determine the results or rating.

In using the system here described it was found that it took considerably longer to make the first few inspections, until the persons became familiar with the standards for each item. With a little practice, however, the system became as fast as any formerly employed, and the end results were more uniform.

It was assumed that the colors would be changed from time to time, as the need was indicated and the sanitation program progressed. Those items that were weighted heavily and capable of giving an establishment the total rating of "poor" were items that could cause disease or injury to the public. A sanitary privy was rated "good" but an open privy was rated "poor" and generally had enough weight to give the establishment a "poor" rating as a whole. This was based on the fact that exposed human excreta were potentially capable of causing an outbreak of disease. The item "equipment" in a restaurant, dairy farm, or pasteurizing plant was considered less important than the item "handling." It was obvious that an operator could have poor equipment and yet do a good job of cleaning, sterilizing, and handling, and end up with a product that was not a hazard to the public. On the other hand, an operator could have the best of equipment and do a poor job of handling, whereupon the products from his establishment could be a potential threat to the health of his customers. Therefore, the value assigned to "equipment" can only reduce the establishment rating to "fair," while the value assigned to "handling" can produce a total rating of "poor."

An office record form known as the Sandex was also adopted. It was a standard kardex form that fitted into a Remington Rand Kardex system. An example follows (Table 2).

On this Sandex were placed the results of each year's inspections, and by using colors to indicate the relative score on the various items, as explained above, any major deficiency in the sanitary condition of an establishment was thus evident at a glance. An additional colored tab could be used to indicate the general or overall rating assigned an establishment. This has proved to be a most useful instrument in presenting the results of the sanitation program to city and village councils, to the health officer, to visitors, and in filling out the American Public Health Association *Evaluation Schedule* and state reports. It helped materially in planning work and in directing the sanitarians' activities to the most important problems. It also provided a history of improvements for a ten year period, and gave the administrator an opportunity to gauge the accomplishments of the sanitation program.

On the exposed back side of the Sandex form there was provided ample space to make a line drawing of the layout and to place a 2¼" x 3¼" photograph of the establishment. There was also a 6" x 8" space where a record of milk analysis, history of improvements, or other information that is pertinent to the record might be placed. The space on the face of the Sandex card to the right of the items should be used to record special survey data, such as electric pump, slate blackboards, plaster walls, adjustable seats, oil burners, etc.

When this system was put into effect in the MCHP area it was possible to compare the sanitation status of one county with that of another. This

TABLE 2

Food Establishment

	Date	..	..	..	..	..	..	..	..	..	..	..	..
Establishment		..	..	..	..	..	..	..	..	..	..	..	..
Housing	Code	..	..	..	..	..	..	..	..	..	..	..	..
Building	1	..	..	..	..	..	..	..	..	..	..	..	..
Ventilation	2	..	..	..	..	..	..	..	..	..	..	..	..
Lighting	3	..	..	..	..	..	..	..	..	..	..	..	..
Screening	4	..	..	..	..	..	..	..	..	..	..	..	..
Seating	5	..	..	..	..	..	..	..	..	..	..	..	..
Safety	6	..	..	..	..	..	..	..	..	..	..	..	..

directed our attention to the wider area and to question what could be accomplished if all the counties put on a united drive to raise the majority of the establishments of any one kind to a rating of "fair" or better. This was tried in school and milk sanitation with surprisingly good results.

This system of evaluation was used in the MCHP area for five years. As experience accumulated, various items were reviewed and changes made to fit more closely the problems of the field. The Michigan Department of Health and the School of Public Health of the University of Michigan became interested in the system and met with the group of engineers of the MCHP to broaden its use. At this time many items were reworded to reflect more accurately the thinking of the group. The language of the field manual was then changed to read exactly alike whenever the same item in any sanitation program was being described. This made it easier to change from one type of establishment to another when making inspections, and the sanitarian had less details to remember. The items were arranged so that they appeared in the same location on each inspection form. A code number was assigned to each item: 1 for "Building," 8 for "Water Supply," etc., while 9 was "Bathing" and only appeared in the resort and school forms.

The challenge to the public health engineer is not to see how many establishments he can drive out of business, but rather to improve those that he has, so that they do a satisfactory job. His efforts are based on the fundamental principle that people will make the needed changes when they understand the reasons for them. The MCHP sanitation standards enable the operator of any particular establishment to know the requirements for any given item and to know the public health significance of the particular requirement. The significance of the item would be indicated to the operator by the colors that are found in the symbol provided at the left margin of the standards.

These standards were not developed with the idea of making them law. They should be regarded as recommendations and should be presented to the owners of the establishments under inspection as recommendations. For legal backing the short form of the U. S. Public Health Service *Milk Ordinance* is used in milk control work and the *Food Code* for food control. For school sanitation, compliance is on a coöperative basis, since in Michigan the school laws are under the Department of Public Instruction. Copies of all recommendations to school directors and boards are sent to the County School Commissioner, who has the legal responsibility for the schools of the county. In resort sanitation and in industrial health the program functions entirely on a coöperative basis.

These standards were developed with the idea of being as educational as possible to persons involved in the inspection. For example, the school standards are explained to teacher groups in workshop courses. Each teacher is given a copy and urged to evaluate the sanitation status of her school. Many of the teachers have the children and parents participate in this evaluation. It provides a good method for the people interested in the school to appraise the building objectively, to know how it rates from a sanitation standpoint, and what improvements are necessary to raise the rating on any given item. Space is provided on the form for an improvement schedule, and the school boards can budget their efforts to improve first the items that will give them the better rating. Home economics teachers use the forms as resource material in their food classes. Home hygiene survey forms were developed also, and in some school districts the

children after evaluating the school made a home hygiene survey of all homes in the school district. Three universities are utilizing these standards as a teaching device in their sanitation classes. Pasteurizing plant operators use the retail dairy and dairy farm sections to evaluate their plants and producer farms. This system is now in use in many of the county health departments in Michigan. Many educators in Kentucky, Mississippi, and Oklahoma are finding them useful in their respective areas.

Though intended neither as a potential legal requirement nor as a system of criteria covering every conceivable sanitary situation in the public health field, the system of evaluation developed by the engineers of the MCHP has accomplished great improvements in the application of uniform standards through the seven county area. It has proved indispensable in the instruction of scores of students who annually spend some months in the area participating in the field training program. The method of group attack upon the problems of diversified standards and techniques of application is recommended to any environmental sanitation department. It is a method that cannot fail to pay dividends if it only demonstrates that legally independent agencies can work together for the solution of common problems. The Michigan Department of Health has sent a courtesy copy of the field manual to every county health department in the United States.

Medical Care for American Soldiers

News Notes, July 15, 1946, issued by the Office of The Surgeon General, U. S. Army, announces the appointment of 58 permanent civilian surgeons and 16 leading civilian physicians as consultants to the Secretary of War through The Surgeon General. These individuals, all of whom are specialists in their respective fields, are for the most part former Medical Corps officers who served with distinction during the war. Located strategically throughout the country, they have been appointed as part of the Army Medical Department's program to maintain the highest possible standards of medical practice. Their aim will be to evaluate, promote, and improve, wherever possible, the quality of medical care given the American soldier.

Gonococcus Examinations: A Comparison of Slides, Mailed Slants and Immediate Plates

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THE advantages of the culture method over the slide in the laboratory diagnosis of gonorrhea have been demonstrated repeatedly. However, the lack of a satisfactory procedure for sending material for culture through the mail has prevented wide use of the technique. Except in hospitals and clinics with adequate laboratory facilities, culture procedures have so far had a limited application, and the physician in private practice still relies mainly upon slides.

Many methods for mailing gonococcus cultures have been reported, including the use of dry ice, thermos jugs, inhibiting dyes, and specially enriched media.[1-5] Some of these procedures have given satisfactory results but are not practical for general use. Recently Usher and Stein[6] reported the statewide use of mailed cultures in New Jersey. They used the modified horse-plasma hemoglobin agar of Peizer and Steffen[7] dispensed in small tubes and overlaid with carbon dioxide. The inoculated slants were brought within 3 hours to culture stations where they were incubated until they could be mailed to the central laboratory. An increase of 67 per cent in positive findings over the results with slides was noted in a large series. These results are striking, but at the present time the use of the culture stations for preliminary incubation is not practical for the comparatively thinly populated area served by our laboratory. Porterfield and Nelson[8] have reported a series of 151 cultures for gonococci on slants of proteose No. 3 agar and hemoglobin enriched with Bacto supplement A and dispensed in screw-capped tubes. Incubation was delayed for 8 hours. Compared with slides, the cultures resulted in an increase of 60 per cent in positive findings.

It appeared to us that a culture method that would meet the needs of the physicians in our area must fulfil the following requirements:

1. The method must be simple and must involve the use of a medium which remains satisfactory for several weeks.
2. The specimen must be suitable for mailing without any special packing device such as dry ice.
3. The results must show considerable advantage over the slide method.

The use of a solid medium dispensed in tubes seemed the most practical starting point, and in April, 1944, we began a study of delayed cultures on slants of coagulated blood agar, using material from the Grand Rapids Social Hygiene Clinic. This report includes the results of approximately 1,000 delayed specimens for gonococcus cultures compared with slides and routine immediate cultures on plates.

METHODS

Medium—The proteose No. 3 agar and hemoglobin medium of Difco was dispensed in Petri plates for the immediate cultures, and in slants in screw-capped tubes for the mailed specimens. The medium was freshly prepared each week, and was kept in the refrigerator until the day of use.

Procedure for obtaining specimens—Specimens were obtained from female patients at the Grand Rapids Social Hygiene Clinic by the physicians and nurses in charge. Smears on slides were prepared from the cervix, urethra, and vagina. The routine or immediate cultures on plates were made according to the procedure we have used for several years; the swabs with exudate from the cervix and urethra were placed immedately in separate tubes containing 1 ml. of tryptose veal infusion broth. After the clinic the nurse removed the swab from the broth and streaked one-quarter of a "chocolate" agar plate, using one plate for each source. The plates were brought to the laboratory where the bacteriologist spread the inoculum over the remaining three-quarters of the plate from the streaked area, using a wire loop. The plates were then incubated at 37° C. in jars with candles.

When the study of delayed cultures was first started, slants were inoculated at the laboratory from the swab in broth, and the slants were allowed to stand at room temperature for 24 hours before being placed in the incubator. Later, in order more nearly to approach a procedure which could be used in a physician's office, an additional swab was used at the clinic for each source, and a slant was inoculated immediately, without the use of broth. This required the use of 3 swabs from each source, one each for the plate, slant, and slide. At first these inoculated slants were brought to the laboratory, where incubation was delayed for 24 hours. When the results by this method were found to be encouraging, slants were sent to the laboratory by mail.

Examination of cultures—After 48 hours at 37° C. plates and slants were examined for colonies typical of gonococci. These were tested with dye for the oxidase reaction, and oxidase-positive colonies were picked, Gram-stained, and examined microscopically. Early in the study the gonococci were isolated in pure culture for further study. More recently positive reports have been made on the basis of colony, oxidase reaction, and microscopic appearance, except in the case of atypical organisms or cultures from medicolegal cases. We are now beginning to make use of slide agglutination tests, using a commercial antiserum.

RESULTS

The results in the early part of the study, when the slants were not mailed but were allowed to stand for 24 hours at room temperature before being placed in the incubator, have been summarized separately in Table 1.

TABLE 1

Cultures for Gonococci: Preliminary Series of 172 Delayed Slants Compared with Slides and Plates

Slide		Delayed Slant		Plate	
Result	*No.*	*Result*	*No.*	*Result*	*No.*
Negative	139	−	121	−	118
				+	3
		+	18	−	3
				+	15
Positive	33	−	4	−	1
				+	3
		+	29	−	2
				+	27

Unsatisfactory slants: 1

The tabulated results include 79 slants inoculated with swabs from broth, and 93 slants inoculated with swabs directly from the patient. Of the 139 negative slides, 121 were also negative with the slants and 18 were positive.

Three specimens negative by slide and slant were positive with the immediate culture on plate. Three of the plates corresponding to the 18 positive slants were negative. Of the 33 positive results with slides, 4 were missed by slant and 3 by plate.

The results in this preliminary series of 172 were analyzed further in Table 2.

TABLE 2

Positive Gonococcus Results: Comparison of Delayed Slants with Slides and Plates Preliminary Series of 172

	Number	Per cent of Total	Advantage Over Slide	
			Number	Per cent
Positive				
Slide	33	19.2	..	....
Slant	47	27.3	14	42.4
Plate	48	27.9	15	45.5
All methods	54	30.8	..	....

The total numbers of positive slides, slants, and plates were 33, 47, and 48, respectively. Expressed as per cents of the total number these are, in order, 19.2, 27.3, and 27.9. There were 14 more positive results with slants than with slides, or an increase of 42.4 per cent. With the plates the advantage over the slides was 15, or 45.5 per cent. The total number of positive results with all three methods was 54, or 30.8 per cent.

Based upon these results with delayed cultures, inoculated slants were sent from the clinic to the laboratory by mail. The clinics were held from 1 to 3 in the afternoon, and the cultures reached the laboratory between 8 and 9 o'clock the following morning. According to plan, they were not placed in the incubator until noon. At this time the screwed caps were loosened and the slants were placed in a moist jar with a candle.

The results of 902 mailed slants compared with slides and plates are shown in Table 3.

There were 815 negative slides. Of the corresponding mailed slants, 749 were negative and 66 positive. In 39 instances plates were positive when both slant and slide were negative. Of the plates corresponding to the 66 positive slants, 60 were positive and 6 negative. There were 87 positive slides, of which 66 were positive by slant and 79 by plate. In other words, 21 were missed by slant and 8 by plate. Twenty-one slants were overgrown and unsatisfactory and were not included in the tabulation.

TABLE 3

Cultures for Gonococci: Results of 902 Mailed Slants Compared with Slides and Plates

Slide		Mailed Slant		Plate	
Result	No.	Result	No.	Result	No.
Negative	815	−	749	−	710
				+	39
		+	66	−	6
				+	60
Positive	87	−	21	−	6
				+	15
		+	66	−	2
				+	64

Unsatisfactory slants: 21

TABLE 4

Mailed Slants for Gonococci: Positive Results in a Series of 902 Specimens Compared with Slides and Plates

	Number	Per cent of Total Specimens	Advantage Over Slide	
			Number	Per cent
Positive				
Slides	87	9.6	..	....
Slants	132	14.6	45	51.7
Plates	178	19.7	91	104.6
All methods	192	21.3	..	....

The numbers of positive results by slide, slant, and plate were 87, 132, and 178, respectively. Expressed as per cent, these are, in order, 9.6, 14.6, and 19.7. Combining all three methods, there were 192 positive results. In other words, even the immediate plate failed, with 14 specimens found positive by slide or slant. There were 45 more positive findings by slant than by slide,

an increase of 51.7 per cent. With the plates, the increase in positive results over the slides was 91, or 104.6 per cent.

DISCUSSION

The study so far has been considered as exploratory only, but the results appeared sufficiently promising to form the basis for a preliminary report. One point of practical interest which requires further study concerns the time in transit. In this connection we now have under study cultures mailed from the Social Hygiene Clinic in Muskegon, a town 50 miles away. To date about one-half the specimens from Muskegon have reached the laboratory 2 days or more after inoculation, and with these the results have been poor. Further work is necessary to determine whether 24 hours is the maximum time which can elapse before incubation is started, in order to obtain satisfactory results.

As with all laboratory examinations, the care with which the specimen is collected must be stressed. This applies to the preparation of smears as well as to the inoculation of medium for culture. The fact that a larger number of positive results were obtained by the use of all three methods than by any one method alone illustrates the variation due to random sampling. It is realized that great variation in collection of specimens will be encountered among doctors in private practice. However, since this applies also to slides, the same ratio in positive findings obtained in the clinic series could still be expected.

It should be emphasized again that in order to be successful for wide application the culture method must be kept simple. Efforts should be directed toward obtaining the optimum conditions for the growth of the organism. The effect of small variations in technique was observed when we increased the time of autoclaving the medium during the early part of the study. The longer period of heating the medium materially reduced the number of positive cultures. Also, any excess moisture on the slants tended to increase the unsatisfactory results, due to spreading of contaminating organisms.

In connection with future work it is expected to try various modifications of the medium. So far we have used only the Difco proteose No. 3 agar with hemoglobin. Addition of enriching substances such as yeast has been reported of value in immediate cultures and these should be studied in connection with mailed slants. Incorporation of inhibiting dyes in the medium might reduce the number of unsatisfactory results. And of course the real test of practicability will be made when the procedure is applied to a wider area.

SUMMARY

A study has been made of 902 mailed specimens for gonococcus cultures on slants of Bacto proteose No. 3 agar and hemoglobin in screw-capped tubes. There were 132 positive findings, or 14.6 per cent, compared with 87, or 9.6 per cent, positive with slides, and 178, or 19.7 per cent, positive immediate cultures on plates.

Compared with slides, the increase in positive results with slants was 51.7 per cent, and with plates, 104.6 per cent.

It is considered that the method as presented offers promise. Further studies are in progress pointed toward improvement of the procedure and definition of its limitations.

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Cancer Research Grants

Upon recommendation of the National Advisory Cancer Council the U. S. Public Health Service in July approved grants-in-aid totaling nearly $50,000 to eight American universities for cancer research. One-fourth of this sum was for studies in gastric cancer which has been receiving special attention from the Cancer Council since 1940. In that year it sponsored a conference on gastric cancer at the National Institute of Health, which was widely attended by scientists from all parts of the country. The Advisory Council has requested Surgeon General Thomas Parran to call another such conference at the University of Chicago in the fall of 1946.

The members of the National Advisory Cancer Council are:

Dr. George M. Smith, Executive Director of Council, and Professor of Anatomy of Yale University

Dr. Frank E. Adair, President of the American Cancer Society, Inc., and a staff member of Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York

Dr. A. C. Ivy, Professor of Physiology, Northwestern University Medical School

Dr. Sherwood Moore, Director of the Mallinckrodt Institute of Radiology, St. Louis

Dr. Robert S. Stone, Professor of Roentgenology at the University of California

Dr. Charles B. Huggins, Professor of Surgery at the University of Chicago, Chicago School of Medicine

Surgeon General Thomas Parran, Chairman, *ex officio* of the Council.

Dangers Associated with the Use of Living "Attenuated" Typhus Vaccine

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ALTHOUGH the dangers of the use of so-called "attenuated" living typhus fever vaccines have been repeatedly pointed out, these vaccines still continue to receive favorable comment from time to time.[1, 2] In November, 1945, one of us (J.F.S.), while engaged in typhus control activities in Hokkaido, Japan, obtained a copy of an official Japanese report entitled "Survey of the Typhus Epidemic in Hokkaido During the Greater East Asia War," compiled December, 1944, by the Sanitation Bureau, Department of the Interior, Government of Hokkaido. In Chapter IV of this report, pages 18–19, there is given a brief account of the difficulties that Japanese health authorities encountered in 1944 in the use of a "bile-attenuated" murine typhus vaccine for the prevention of epidemic typhus.

The purpose of this present brief communication is to record this unfortunate incident in the literature and once again to bring to the attention of investigators and health authorities the dangers involved in the use of a living typhus fever vaccine.

It is perhaps apropos of this point to state that the use of a killed yolk sac ether extracted epidemic typhus fever vaccine[3, 4] has been used with noteworthy success in the U. S. Army during the past World War II.[5] Indeed, as a direct result of the routine immunization with this vaccine of all troops traveling to or stationed in areas where louse-borne typhus fever is present in the civilian population, there has not been a single death from the disease in the Army during the period from January 1, 1942, to December 31, 1945. Essentially similar beneficial effects devolving from the use of this vaccine have been noted by others.[6–9] Their observations reveal that the present ether extracted yolk sac egg typhus vaccine made with the Breinl strain of epidemic typhus diminishes the probability of a person developing epidemic typhus after exposure, greatly modifies the disease if it occurs in a vaccinated person, and practically prevents death from typhus.

The following is a translation of the Japanese document described above: Part 3. The incident of the "Takakura San Maru" with high temperature reactions.

In October, 1943, there was an outbreak of 130 cases of typhus among 420 fishermen brought back to Hakodate from the "Yaina No. 2 fishing ground" of the Kamchatka coast on board the "Shoho Maru" of the Japanese-Russian Fishing Company (Nichi-Ro Gyogyo Kabushiki Kaisha). In view of this happening, a plan was made to provide preventive inoculation for all fishermen engaged in fishing in northern waters and a request was sent to the Kitasato Institute.*

* Tokyo, Japan.

Personnel from this Institute came to Hakodate on May 10 and prepared preventive inoculations in the dispensary attached to the Japanese-Russian Fishing Company. From May 15 on, preventive inoculation was practised. At this time there was an outbreak of typhus in the city of Hakodate and its vicinity and as news of the inoculation spread, many persons requested the inoculation. Up to June 10, in addition to 8,000 fishermen, 67 members of the Hakodate Medical Association, 150 employees of the Hakodate city hospitals, and railroad personnel, personnel of the Maritime Transportation office, of the Marine Products School, Police officials and others, altogether more than 11,000 persons were inoculated. This typhus inoculation was known to consist of the causative organisms of typhus,* *Rickettsia mooseri*, attenuated by bile and used in dilution. The progress of the inoculation was carefully watched, but up to then only about 10 per cent of the inoculated persons complained of light headache; inability to work, and other untoward reactions were not recorded. Thus, this inoculation program was not interfered with. Then by chance, on June 11, among 500 persons inoculated, there was a group of 306 laborers embarking on the "Takakura San Maru." From approximately June 18 on, while the vessel was in port at Otaru, about 218 of this group (about 70 per cent of the persons inoculated) developed an attack of fever; symptoms were headache, giddiness, and aching of the whole body. The temperature above 38° C. lasted generally for a period of 14 days and then subsided and the condition returned to normal. Approximately 7 days after the outbreak of fever more than 30 per cent of the persons affected showed a manifest positive Weil-Felix reaction of more than 1:1600, indicating typhus. Clinically, the condition could hardly be distinguished from typhus, but recuperation took place with mortality limited to 1 case. On account of the occurrence of this incident, the Government dispatched communicable disease control medical personnel to the spot for an investigation and at the same time issued a warning against the use of live organisms for preventive inoculation. The safe treatment of the severely affected patients and the course of the disease in the affected laborers were also supervised, health inspections were made, and thorough delousing was directed. Fortunately, other cases of infection did not occur.

Comment: Of the 306 laborers embarked on the "Takakura San Maru," 16 did not receive the inoculation. Of the 290 inoculated, 218 had a high temperature reaction with about 39°. Of the remaining 78 (sic) 12 had been typhus patients in Hakodate City in October of the previous year. Nine others had been in close contact with patients during the previous year but had not been ill; this time again, they had no reaction. The other 57 were not conscious of any reaction. Again of the 16 not inoculated, one reported feeling unwell for 2 or 3 days but it is not clear whether this was a symptom of infection. Again the earliest onset of the symptoms was on the 7th day, the latest onset on the 24th day. Onsets of symptoms on the 16th and 17th day were most numerous.

(End of translation)

* Murine typhus.

DISCUSSION

The record of the use of living typhus vaccine presents a series of frank failures. As early as 1916, Nicolle[10] attempted the use of highly diluted virulent epidemic typhus organisms in graduated dosage. Such attempts were abandoned for obvious reasons. Likewise, the addition of immune sera,[11] attenuation by cold,[12] addition of phenol, formalin, or iron hydroxide,[13] or by coating first in lanoline and afterward in olive oil,[14] met with no success.

The usual mildness of murine typhus in man, as compared with epidemic typhus, led to the use of the causative organism, *R. mooseri*, for immunization against epidemic typhus. It will be recalled in this connection that recovery from murine typhus confers substantial cross-immunity in man against louse-borne typhus. Since it was realized that no strain of murine typhus is of sufficiently low virulence to be employed directly as a living vaccine, investigations were directed toward methods of attenuation of this organism. As a result of these investigations, four types of "attenuated" living murine typhus vaccine have been described: Blanc's biliated guinea pig suspension,[15] Blanc and Baltazard's flea feces (bile attenuated) modification,[16, 17] Nicolle and Laigret's dried, coated (egg yolk and oil) guinea pig and rat suspensions,[18, 19] and Laigret and Durand's mouse-brain passage (egg

yolk coated) modification.[20] The reader is referred to the review of Biraud [1] and Murgatroyd [21] for a complete description of these vaccines. The vaccine used by the Japanese in the report translated above is probably of the Blanc's biliated guinea pig suspension type.

Despite the optimistic views of Biraud [1] with respect to the use of living typhus vaccines, there is no evidence to show that the virus in any of the four types noted above is truly modified or really attenuated as is the case with either the smallpox or yellow fever virus as used in its respective vaccine. As Dyer [22] has pointed out, adequate dosage of these "attenuated" typhus fever vaccines in animals will produce the typical disease. That this fact also exists in the case of man is also well known, the clinical typhus fever which may develop after the administration of these "attenuated" typhus vaccines being passed off as a "reaction." Indeed, these reactions may be so severe as to cause death. An attempt to use the biliated vaccine of Blanc during the 1936 typhus epidemic in Chile [1] resulted in the development of clinical typhus with fatalities in some instances. Of 550 individuals inoculated with this living vaccine, 227 showed febrile reactions, 5 of which were fatal. These reactions undoubtedly were frank murine typhus infections. Suarez [1] explains these unhappy results by stating that the vaccinations in Chile were carried out by a person who did not have sufficient experience and who employed suspensions of 1/1000 guinea pig material instead of 1/2000. The reader may draw his own conclusions.

In addition to the danger of developing clinical typhus with these vaccines, two other perfectly obvious drawbacks still remain and should prove powerful deterrents to their use. First, fleas and lice may be infected by feeding on persons inoculated with these vaccines; and second, it is difficult to assure freedom from bacterial contamination of these vaccines since they depend on the presence of a living agent for their action.

SUMMARY

An account is given of difficulties encountered by Japanese health authorities following the administration of a biliated living murine typhus vaccine. In a group of 290 persons inoculated with this vaccine, 218 (70 per cent) developed symptoms and serological manifestations of typhus fever. There was 1 fatality. Although the period of incubation ranged from 7 to 24 days, many cases developed the disease within a 16–17 day period.

The dangers of the use of living typhus vaccine are briefly presented and note is made of the favorable results which have been recently obtained against epidemic typhus by the use of a killed ether extracted yolk sac vaccine.

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Medical Fellowships for Women

The American Association of University Women announces a series of research or graduate study fellowships for 1947–1948. Seventeen national and 8 international fellowships are announced, each carrying a stipend of $1,500. A special achievement award of $2,500 is also announced.

In general the fellowships are awarded to women candidates who have completed two years of residence work for the doctor's degree or have already received the degree.

For detailed information address the Secretary, Committee on Fellowship Awards, American Association of University Women, 1643 I Street, N.W., Washington, D. C.

Place of the Entomologist in Public Health*

THEODORE A. OLSON

Assistant Professor, School of Public Health, University of Minnesota, Minneapolis, Minn.

IN February, 1945, General Simmons in reviewing recent advances in that branch of preventive medicine which deals with arthropod-borne diseases said, "The United States Army is now carrying on two total wars; one against the Axis, the other against the insects which transmit disease." Civilian health authorities too are becoming increasingly aware of the importance of these diseases and their potential dangers. As a result the literature has been enriched during the past few years by manifold contributions dealing with civilian as well as military problems relating to the arthropod-borne diseases. These papers have dealt with subjects ranging from the virus encephalitides to filariasis, and constitute a vast but incomplete body of information which must be subjected to critical reading and interpretation. A statement concerning advances made in the understanding or control of each disease or type of disease now known is not within the scope of this discussion; however as an example of the kind of progress which is occurring, a brief review may be made of some of the advances in our knowledge of arthropod-borne virus diseases.

The virus of the St. Louis type encephalitis, for instance, has now been isolated from naturally infected *Culex tarsalis*, *Culex pipiens*, and *Aedes dorsalis* mosquitoes caught in California. The common dog tick, *Dermacentor variabilis* Say, has been infected with the Hubbard strain of this virus when fed on infected animals. It has been found further that this arthropod can transmit the infection to susceptible animals and the female tick can pass on the virus through all stages of the 2d generation into the 3d generation. In connection with our search for a true reservoir or overwintering mechanism it it interesting to note that Smith, Blattner, and Heys, working at St. Louis have isolated the virus from chicken mites *(Dermanyssus gallinae)* taken in a chicken coop during a non-epidemic period. Transovarial transmission of the pathogen to offspring has also been demonstrated for this mite.

Western type equine encephalomyelitis virus has now been isolated from naturally infected *Culex tarsalis* 75 times, and from mosquitoes taken in three widely separated states (Washington, California, and Nebraska). In addition five other species have been found naturally infected. They are *Aedes dorsalis, Culex stigmatosoma* Dyar, *Culex pipiens, Culiseta inornata* Will, and *Anopheles maculipennis freeborni* Aitken. In all, 13 species of mosquitoes have been shown capable of experimental transmission, indicating that the vector possibilities are great. Sulkin has recently reported chicken mites to be naturally infected with this virus. Syverton and Berry were able to infect the tick *Dermacentor andersoni* Stiles and show transfer to progeny. However,

* Presented before the Victory Meeting of The Public Health Association of New York City in collaboration with the American Public Health Association, New York, N. Y., December 13, 1945.

naturally infected ticks have not been found even in epizoötic areas.

Other encephalitides including the eastern equine, the Russian spring and summer, the Venezuelan and the Japanese "B" types, according to Hammond and Reeves, deserve serious consideration as a potential danger to this country. The concern over the Japanese "B" virus for instance is based on the high case fatality rate of 42–75 per cent which often characterizes the disease and on the knowledge that 6 species (3 genera) of California mosquitoes can transmit it. Once introduced, this Japanese virus might easily constitute a greater danger to our population than the types we now have.

The growing list of neurotropic viruses which affect man and animals has been further augmented by recent reports of new insect-transmitted viruses from Kern County, California, Colombia, South America, and from Uganda, Africa. There is evidence, therefore, that there are a number of arthropod-borne viruses yet to be discovered and that these may be of world-wide distribution and importance.

Recent studies of other arthropod-transmitted diseases such as scrub typhus, Bullis fever, relapsing fever, jungle yellow fever, and of the classic long known diseases such as malaria, typhus, and plague, are deserving of mention but are too voluminous to abstract here.

From a medical standpoint it may be said that many species of arthropods provide a constant menace and that the conquest of several of the most deadly and disabling human diseases depends on the success with which the control of the arthropod transmitters of these diseases may be accomplished. The effectiveness of control is in each instance usually directly proportional to the knowledge we have concerning the life history, ecology, physiology, distribution, etc., of the arthropod involved. In the case of malaria for instance, although it has been a major scourge since ancient times, rational methods of control have been possible only during the last few decades.

The phylum *Arthropoda* contains over 700,000 species. This is more than 75 per cent of all the animal kinds now known. Many of the species are furthermore enormously abundant as individuals. As many as 5,000 chinch bugs per square foot may frequently be found in favorable hibernating quarters. In one instance 28,000 specimens of the tropical rat mite *(Liponyssus bacoti)*, an ectoparasite of rodents and a potential carrier of murine typhus, were taken from the body of a hamster (personal observation). Insects alone, under more average conditions, have been variously estimated as occurring on or in the soil at the rate of 1,000,000 to 65,000,000 per acre. H. Elliot McClure concluded from extensive trapping experiments that on the average in the morning 3,000 and in the evening 11,000 insects may be found in flight over an acre tract.

The reproductive capacity of many species is very high and is well illustrated by Hodges' calculation of the biological potential of houseflies. One pair of flies beginning operations in April might by August, if all young survived, be the progenitors of a sufficient number of offspring to cover all the earth to a depth of 47 feet (based on $\frac{1}{8}$ inch cube space per fly). Fortunately a large number of natural forces are constantly at work opposing phenomenal increases, and such theoretical extremes are actually never reached. An occasional breakdown in some factor of environmental resistance may, however, permit a temporary spurt in reproduction and a brief appearance of large numbers.

Arthropods are ubiquitous; members of the group occur at altitudes of 20,000 feet on mountains and to depths of

18,000 feet in the sea. Different species are adapted to live in the air, on land or in soil and in fresh, brackish, or salt water. Some are parasitic on plants or animals, others are free living. Some are colonial, others are solitary in their habits. Few environments are entirely unsuited to all members of the group.

The eminent success demonstrated by insects and their allies in surviving unfavorable conditions and in rapidly reaching a high numerical level when environmental factors permit, makes them even more dangerous as vectors or reservoirs of disease.

Probably because of these diverse adaptations to various modes of living and, when needed, to survival or rapid increase, the phylum has become the largest in the animal kingdom with more species than all others combined.

Although a knowledge of all phases of the biology of a vector or reservoir should be known, the importance of accurate identification can scarcely be overemphasized. The matter is self-evident and little need be said in its support when as in the case of anophelines, one species may be a demonstrated and dangerous vector of malaria, while another although closely allied is relatively harmless. Much loss of life or, on the other hand, loss of money and effort in superfluous control, might well be the consequence of erroneous identification.

In so diverse and large a group of organisms as the *Arthropoda* mistakes can easily be made, especially by those not specifically trained in taxonomy. Even the expert must use care. One of the most striking examples of misidentification is that of our much publicized and dangerous malaria vector *Anopheles gambiae* Giles.

This species as taken in Africa was known widely and recorded in literature as *Anopheles costalis* Loew until it was discovered that originally there had been a misidentification and that the name *A. gambiae* actually applied.

Another case in point is the confusion existing between *Anopheles rossi, A. subpictus,* and *A. vagus.* The name *A. rossi* has been applied to both *A. subpictus,* with which it is identical, and to *A. vagus.* Past records of *A. rossi* cannot, therefore, be trusted to refer to *A. subpictus* except where it can be shown that they come from an area where *A. vagus* never occurs.

Other species than mosquitoes are also subject to confusion. Early Indian plague investigation reports implicated *Pulex pallidus,* a flea not normally an ectoparasite of rats. Subsequent investigations indicated that instead of the one reported, there were in reality three other species of fleas *Xenopsylla cheopis, X. brasiliensis,* and *X. astia*

The arthropod group is so large and varied an aggregation of organisms and each individual species may react to its environment in such a diverse and often complex way that an intimate knowledge of even a moderate number of these forms can scarcely be available to anyone but the trained entomologist or arachnologist. For this reason it is not to be expected that the family physician, the epidemiologist, the bacteriologist, or the public health engineer working alone can solve the problems relating to the exact knowledge of transmission mechanisms or preventive measures in any given type of arthropod-borne disease. On the contrary, only with the full coöperation of all these and the added services of the medical entomologist can full success be attained. The latter specialist is an individual who through long years of training and experience has acquainted himself with the best available knowledge concerning insects and other arthropods which may be potential disease carriers. A knowledge of control methods and research techniques is also a part of his "stock in trade."

Past experience has indicated that the specialized insight and guidance of an entomologist is essential to an exacting study of arthropods in their relation to disease. His work complements that of the other specialists and the result is a unified effort free from the pitfalls which frequently confront those who have ignored the source of knowledge he represents.

Unfortunately, too few health organizations have availed themselves of this type of service. It would appear that each state health department and many municipal or county health organizations could utilize at least one entomologist at the present time.

If present trends continue, there will be a fuller recognition of the contributions which the entomologist can make to the solution of present and future problems in public health, and the need for this type of service will soon be much greater.

Pepper-Neely Bill for Cancer Research Defeated

"The atomic bomb became a reality because of sufficient funds, sufficient man power, every available expert, and then planned coördinated research. This bill proposes the same planned, coördinated research in a supreme endeavor to discover means of curing and preventing cancer. Seventeen million Americans who are doomed to suffer and die of cancer are entitled to this research."

With these words Representative Matthew W. Neely (W. Va.) introduced a bill authoriing expenditures of $100,000,000 to mobilize scientists in cancer research. H.R. 4502, as S. 1875, was introduced in the upper chamber by Senator Claude Pepper of Florida. The bill was reported upon favorably by the Foreign Affairs Committee of both the House and Senate. When brought to a vote in the House, however, it was defeated. The Senate adjourned before the bill was brought to a vote.

The bill called for the appropriation to enable the President "to undertake, in whatever manner he may deem most appropriate, to mobilize at some convenient place in the United States an adequate number of the world's outstanding experts, and coördinate and utilize their services in a supreme endeavor to discover means of curing and preventing cancer; and to take any additional action that he may consider necessary or proper to achieve the desired result." It is understood that the President planned to avail himself of the services of the National Research Council in selecting these experts and developing a program.

The bill did not specify a particular agency through which the proposed cancer research must function. It might, therefore, have been set up as a new agency outside the National Cancer Institute of the U. S. Public Health Service. Representative Alfred L. Bulwinkle made strenuous objections to the bill on the ground that it was badly drawn in setting up an independent national cancer agency.

The Use of Chlorine Dioxide in Water Treatment*

G. P. VINCENT, J. D. MacMAHON, AND JOHN F. SYNAN

The Mathieson Alkali Works (Inc.)

ELIMINATION of unpleasant tastes and odors in municipal water supplies is a well known problem to those concerned with water treatment. This problem is now being solved by the use of chlorine dioxide in a number of cities where phenolic wastes or algae were the cause of unpalatable water.

Chlorine dioxide is a yellow to red gas at ordinary temperatures, with a vapor density of about 2.4. It liquefies at 10° C. and atmospheric pressure. It has an unpleasant odor, which becomes noticeable when it reaches a concentration of 15 parts of chlorine dioxide per million parts of air, and becomes irritating at 45 p.p.m. It is soluble in water to the extent of 2.8 grams per liter at room temperature and 30 mm. partial pressure. At elevated temperatures it decomposes into its elements with explosive violence. Its aqueous solutions are decomposed by light, forming perchloric and chloric acids and oxygen. In alkaline solutions, chlorite and chlorate are formed:

$$2ClO_2 + 2NaOH \rightarrow NaClO_2 + NaClO_3 + H_2O$$

The most interesting property of chlorine dioxide is its remarkable oxidizing power. On a weight basis, expressed in terms of available chlorine, it has, theoretically, 2½ times as much oxidizing capacity as chlorine.

Until recently the valuable properties of chlorine dioxide could not be applied commercially. Because of its instability it cannot be stored or shipped, but must be prepared at the point of use, in quantities as desired. When sodium chlorite, $NaClO_2$, was made commercially available a few years ago, however, it provided a new source of chlorine dioxide which is generated by reaction of sodium chlorite with chlorine:

$$2NaClO_2 + Cl_2 \rightarrow 2ClO_2 + 2NaCl$$

CHLORINE DIOXIDE IN WATER TREATMENT

When it was proved possible to produce chlorine dioxide safely in controlled amounts for various commercial applications, investigations were begun concerning its use in water treatment. Because of its unusual oxidizing capacity, it was suggested that chlorine dioxide might be effective in improving tastes in water supplies where chlorine treatment failed.

The first problem to be investigated was the effect of chlorine dioxide on waters contaminated with phenolic wastes. It is well known that the addition of chlorine to such water intensifies the unpleasant odors and tastes because the chlorine reacts with the contamination to produce "chlorphenols." Laboratory experiments have demonstrated that chlorine dioxide, on the other hand, does not chlorinate these compounds, but instead, destroys them, thus avoiding tastes and odors. In addition,

* Condensed from a paper presented by G. P. Vincent in the Inservice Training Course for Water Works Personnel conducted at the University of Michigan School of Public Health.

TABLE 1

Pretreatment with Chlorine Followed by Chlorine Dioxide *

No.	Phenol Added (p.p.m.)	Chlorine Pretreatment (p.p.m.)	Chlorine Dioxide Post-treatment (p.p.m.)	Post-Chlorine	Taste †
1	0.08	1.0	...	....	xx
2	0.08	1.6	...	....	xx
3	0.08	1.0	0.1	....	x
4	0.08	1.0	0.2	....	x
5	0.08	1.0	0.4	....	0
6	0.08	1.0	0.6	....	0
7	0.01	1.5	...	....	xxx
8	0.01	1.5	0.5	....	0
9	0.01	1.5	0.5	....	0
10	0.01	1.5	0.5	0.15	0
11	0.01	1.5	0.5	0.40	0
12	0.08	1.5	...	....	xxx
13	0.08	1.5	0.5	....	0
14	0.08	1.5	0.5	....	0
15	0.08	1.5	0.5	0.15	0
16	0.08	1.5	...	....	xxx
17	0.08	1.5	0.5	....	0
18	0.08	3.0	...	....	xxx
19	0.08	3.0	0.5	....	0

* The water used was raw water, taken from the Niagara River at the intake of the No. 2 filter plant. Before use it was treated with 17 p.p.m. alum, settled for 2 hours and filtered.

† Taste, after the water was allowed to stand overnight, was evaluated by five judges, using the following "code" to record their findings:

No chlorphenol — 0
Slight chlorphenol — x
Bad chlorphenol — xx
Very bad chlorphenol — xxx

The degree of "break point" was determined by electrometric titrations for available chlorine.

chlorine dioxide destroys tastes and odors already developed by chlorination.

The laboratory tests were run on both distilled and raw water, to which measured amounts of phenol were added. It was shown that, even in cases where chlorine failed and no "break point" occurred, chlorine dioxide in dosage of 0.5 p.p.m. was sufficient to destroy all tastes and odors encountered in this work.

The raw water was taken from the Niagara River at the intake of No. 2 filter plant of the City of Niagara Falls. Before use it was treated with 17 p.p.m. alum, settled for 2 hours, and filtered. Chlorine was added as chlorine water made up to a concentration of 100 p.p.m. available chlorine.

Chlorine dioxide, generated from a solution of sodium chlorite and sulfuric acid, was added as a chlorine dioxide solution made up to a concentration of 100 p.p.m. The generated chlorine dioxide was blown out with air and dissolved in distilled water.

Since it was necessary to combine the use of chlorine for disinfection with chlorine dioxide for elimination of tastes and odors, another set of experiments was run to determine the most satisfactory procedure to be followed. These experiments demonstrated that prechlorination, followed by treatment with chlorine dioxide, was the most feasible method (see Table).

Chlorine dioxide was found to be equally effective in the treatment of algae contamination. It was found that chlorine dioxide reacts completely and rapidly with such organic matter, leaving a taste-free palatable water.

One of the most difficult problems in water treatment has been the maintenance of active chlorine residuals in the distribution system. This results

from the presence of organic material which is destroyed very slowly by chlorine. Such material gets through into the mains, where it slowly reacts with the chlorine, thus destroying the chlorine residual. There is some evidence that chlorine dioxide aids in maintenance of residual chlorine.

GENERATING CHLORINE DIOXIDE FOR WATER TREATMENT

For water treatment the method of generating chlorine dioxide is based upon the reaction of chlorine with a solution of sodium chlorite. The chlorite solution and the chlorine water are fed continuously into a reaction chamber, and the resulting solution is fed into the water system.

As applied in water supply plants today, the installations employ W & T chlorinators to supply the stream of chlorine water. The discharge line of the chlorinator is connected to one end of the chamber into which the sodium chlorite solution is fed by means of a metering pump. The purpose of the chamber is to insure complete mixing of the chlorine and chlorite and complete reaction of the chlorite to chlorine dioxide before it is discharged into the water supply. The main portion of the reaction chamber is a 4 inch glass pipe, 12 inches long, filled with unglazed porcelain Raschig rings. This is reduced at the lower end to a 1 inch pipe for chlorine inlet, and similarly at the top for the chlorine dioxide outlet. The chlorite is fed through a T-tube at the lower end of the chamber.

There is considerable latitude in the operation of the generator, the major consideration being the completeness of the reaction to chlorine dioxide. For this purpose the minimum proportion of chlorine to chlorite for efficient operation should usually be at least 50 per cent, and preferably 100 per cent, above the theoretical. Since the theoretical ratio in terms of available chlorine is 1 part of chlorine to 4 parts of chlorite, the recommended ratio is not less than 1:2.66, and preferably 1:2. In terms of actual commercial products used, as technical sodium chlorite contains approximately 82 per cent $NaClO_2$, a ratio of at least 1 lb. of chlorine is used for every 2 lbs. of chlorite, and preferably for every 1 lb. of chlorite.

Efficient reaction is obtained as long as a sufficient excess of chlorine is used, even with the pH at 5. When the chlorine is fed at or below theoretical proportions, however, the efficiency of the reaction is reduced and a considerable part of the chlorite remains unconverted to chlorine dioxide.

For practical application to water supply systems, the concentration of the chlorite solutions may be varied to meet the requirements of individual plants. Laboratory and field work indicate that satisfactory conditions result from use of not less than 1.6 grams per liter of available chlorine as chlorite with 50–100 per cent excess chlorine. As long as these proportions are maintained, some dilution below this concentration is possible without seriously impairing the efficiency of the reaction, provided the pH of the chlorine water is sufficiently low.

As the concentration of chlorine decreases, the pH of the water tends to rise. At pH values of 5.5 or above, with very low concentrations of reactants, poor yields of chlorine dioxide are obtained. A four- or five-fold dilution from the concentrations described above will give a satisfactory yield at pH 5, but the chlorine dioxide will decrease sharply if the pH goes above that point. Ordinarily, very low concentrations would not be used in water treatment. If, however, a case should arise where it might be desirable to use them, the water in the generator would have to be buffered to a pH value of 5 or below in order to obtain satisfactory reaction.

Institutions Accredited by the American Public Health Association to give the Degree of Doctor of Public Health for the Academic Year 1946-1947

This list is released by the Executive Board of the American Public Health Association as of July 8, 1946, and considers those institutions from which requests for accreditation had been received to that date. Additional applications will be acted upon in due course.

The criteria governing accreditation for the academic year 1946–1947, as approved by the Committee on Professional Education of the American Public Health Association on June 14, 1946, and by the Executive Board on July 8, 1946, follow the listing.

Columbia University School of Public Health
Harvard University School of Public Health
The Johns Hopkins University School of Hygiene and Public Health
University of Michigan School of Public Health
Yale University School of Medicine, Department of Public Health

MINIMUM REQUIREMENTS FOR INSTITUTIONS TO BE ACCREDITED FOR THE DEGREE OF DOCTOR OF PUBLIC HEALTH *

Adopted by the Committee on Professional Education of The American Public Health Association, June 14, 1946.

The Institution

Criteria 1–7. Identical with those for the M.P.H. degree.†

The Course

Criterion 8. Candidates to be matriculated for the degree of Dr. P.H. shall, for the most part, hold the degree of M.D.; although in exceptional cases, holders of other doctoral degrees or those having equivalent preliminary professional training or experience may be accepted.

Criterion 9. The candidate for Dr.P.H. must complete—or must already have completed—basic courses equivalent to those required for the degree of M.P.H. by the university in which such student matriculates for the Dr.P.H.

Criterion 10. The candidate, in addition to fulfilling criteria 8 and 9, must complete a minimum of one academic year of work in residence at the university; involving advanced specialization in the particular area of public health for which the student is preparing. The period should be at least 2 years for those who do not hold prior doctoral degrees.

Criterion 11. The candidate must indicate capacity to make substantial contribution to the advancement of the science and art of public health by submitting a dissertation based on original research satisfactory to the authorities of the university.

Criterion 12. The candidate must

* These criteria will govern accreditation for the academic year 1946–1947. They may be modified for application after that date; and are likely, in some respects, to be made more stringent. It is the aim of the committee to communicate changes in these criteria to accredited schools at least nine months before the beginning of any academic year.

† Published in the March, 1946, *Journal*.

demonstrate ability for practical leadership in his field, as well as for advancement of scientific knowledge. This may be indicated either

a. by prior successful professional experience in a post involving the exercise of substantial initiative and responsibility or

b. by demonstration of the qualities of leadership in such a way as the school may define.

NOTE: After 1946–1947 it is hoped that the Committee on Professional Education can secure sufficient information to formulate a more precise definition of this alternative.

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Do We Need a Specialty Board in Public Health?

The Committee on Professional Education wants answers to this question. *A News Letter* to the membership dated July 8 included the following:

"The Committee on Professional Education has devoted many hours at recent meetings in considering the arguments for and against the establishment of a specialty board for the purpose of recognizing physicians specializing in public health. The advantages and disadvantages of such a board, as the Chairman of the committee sees them, were stated by him at a meeting on June 14. Dr. Shepard said, 'The advantages would be the recognition of public health as a distinct specialty in medicine; recognition of public health physicians by fellow physicians as specialists; and a salutary effect on salaries both in governmental and civilian services. The disadvantages would be that specialty boards organized under A.M.A. auspices must be self-supporting and the examinations are therefore costly; the specialty board examination patterns are frequently inadequate and unsatisfactory; and there might be too great discrimination between public health physicians so certified and those who are not.'

"Inasmuch as 47 per cent of the Fellows and 36 per cent of the entire membership of the Association are graduates in medicine, the committee concluded that exploration of the desire of the membership was definitely indicated. It voted to endorse the idea in principle and to consult with the Sections of the Association in which graduates in medicine are numerous.

"There will shortly be sent to the members of the Health Officers, Epidemiology, and Maternal and Child Health Sections a memorandum asking for expressions of opinion as to the need of a specialty board in public health. Dr. Shepard would welcome comment now from any member. Letters addressed to him at the New York office will be forwarded."

A number of interesting communications have been received as a result of this, to all of which Dr. Shepard is giving his careful attention. Graduates in medicine are urged to contribute to the discussion. Their opinions are important and will dictate the next steps to be taken.

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HOW MANY FOOT CANDLES?

THE problem of artificial illumination is of primary importance in the sanitation of occupied spaces. Adequate light conduces materially to comfort and efficiency in the duties and avocations of daily life; and faulty illumination causes eyestrain which may be accompanied by reflex functional disturbances of many other organs of the body. Sound standards for artificial lighting are therefore essential tools for the sanitarian, whether he is working in the school, the home, the office, or the factory.

The leadership of the Illuminating Engineering Society in preparing standards of lighting for various types of occupied spaces was therefore welcomed by the public health profession. During the past quarter-century, this organization—often in coöperation with the American Institute of Architects, and, usually, under the rules of procedure of the American Standards Association—has issued a large number of codes of Recommended Practise for Lighting.

These codes have added materially to our knowledge of this subject; and in relation to color of light, distribution of light and brightness contrast they are fundamentally sound. Prior to 1940, they were practical and helpful with regard to intensity of illumination. The code on School Lighting prepared in 1938, for example, called for 15 foot candles for classrooms, shops, and offices, 25 for sewing and drafting rooms and 30 for sight-saving classes. These standards are reasonable and are supported by adequate evidence. Since 1940, however, under the leadership of Matthew Luckiesh of the Nela Park Laboratories at Cleveland, there has been an extraordinary and progressive tendency to increase these standards so that with every report the minimum levels rise; and, beyond the minima set, it is suggested that still more astronomical intensities would really be desirable. Twenty-five to 50 foot candles are specified for average visual tasks, 100 foot candles or more for severe and prolonged visual work, and hundreds and even thousands of foot candles are indicated as desirable in certain cases.

Sanitarians have generally viewed these extravagant standards with justified suspicion. As long as J. E. Ives of the U. S. Public Health Service was alive, we always turned to him for counsel since, though he was a physicist, he understood physiology. Since his death we have turned to the psychologists as

our best guides; and we are fortunate in presenting as the Special Review Article of this issue a thoroughgoing analysis of the whole subject by the outstanding leader in this field, M. A. Tinker, of the University of Minnesota.

In this article, Dr. Tinker analyzes the evidence presented by Luckiesh and his associates in support of their high demands. He shows how the physicists have treated light intensity as a purely quantitative factor, almost as if when a certain intensity proved good, more was necessarily better. They have ignored the fact that the human eye is an adaptive instrument and that preference at a given moment is a function of prior adaptation; not of permanent comfort. They have confused threshold visibility, which is chiefly physical, with ease of reading above the threshold, which is quite a different problem. They have wholly omitted a consideration of the glare effect incidental to very high illumination. Above all—and this seems inexcusable for physicists—they have paid no attention at all to the shape of the curve of visibility and of visual performance. This curve (as shown by Ives many years ago for letter-sorting in the U. S. Post Office) rises rapidly with increase in illumination and then levels off to almost a straight line. Luckiesh computed that it would take 30 foot candles to make newspaper text matter equivalent in visibility to 8-point book type under 10 foot candles illumination; on the other hand, Tinker found that no improvement in reading performance with newspaper type actually resulted with increases beyond 7 foot candles. Lythgoe has found that, under certain conditions, visual acuity continues to increase up to 1,000 foot candles; but the inflection of the curve is at 10 foot candles and increase above 20 foot candles is slight. Actually, Tinker concludes that the critical levels of illumination for different visual tasks vary from 3 foot candles for reading large print to 30 for threading a needle; and that to allow an adequate margin of safety, standards for various activities might range from 10 to 50 foot candles; but not above.

The whole problem is strikingly reminiscent of the controversy of some decades ago with respect to school ventilation. In that field, too, the engineers called for standards (30 cubic feet per minute) which were shown to be excessive by physiological research; and, in view of accumulating evidence, the American Society of Heating and Ventilating Engineers changed its standards to conform to real human needs. The Illuminating Engineering Society should exhibit similar readiness to follow the truth. As Tinker points out, satisfactory results can only be attained by "coördinating the work of engineers, physiologists, and psychologists." Until such coördination is effected, we shall do well to follow the psychologists, since it is human health and comfort which is at stake.

A MAGNA CARTA FOR WORLD HEALTH

THE International Health Conference which met in New York City on June 19, under the chairmanship of Dr. Thomas Parran, concluded its deliberations on July 22. Its discussions were based on the report of a Technical Preparatory Committee which met in Paris between March 18 and April 5. They were conducted with singleness of scientific purpose and in a spirit of mutual coöperation. The Conference achieved signal success and unanimously adopted a Constitution for the New World Heatlh Organization which, as Dr. Parran said at the closing session, is a veritable Magna Carta for world health.

This conference was unique, not only for its harmony and constructiveness, but for several other reasons as well. It was the first general international Con-

ference formally convened under the aegis of the United Nations. Other organizations such as UNESCO, the Food and Agriculture Organization and the World Bank were autonomously established, although they will be affiliated with the UN. The Health Conference, however, was called under a vote of the Economic and Social Council of February 15, 1946, based on a formula proposed jointly by Brazil and China at San Francisco. It is also the first conference to which neutral states, not members of the UN, have been invited as observers. Finally, it is the first of the special technical organizations in which all the three states of the Soviet Union represented in the UN have participated actively. Fifty-one members of the UN had delegates in New York, with 13 more from non-member states (including Austria, Bulgaria, Hungary and Italy) as observers.

The Final Act of the Health Conference included approval of the Constitution of the World Health Organization and the establishment of an Interim Commission consisting of the representatives of 18 member states to convoke a World Health Assembly within six months. This Assembly will determine the permanent location of the WHO and appoint its Director-General; but the Interim Commission is to proceed at once with the appointment of an Executive Secretary and of an expert staff; with the preparation of detailed agenda for the Assembly; with the negotiation of agreements with the UN and other organizations, specifically providing for the assumption of the responsibilities of the Health Section of the League of Nations, the Office Internationale d'Hygiène Publique, and certain health functions of UNRRA; and with direct service in connection with any urgent health problems which may arise in the period before the Assembly meets. Thus, the World Health Organization is already in existence. The delegates of 61 countries signed the conventions in New York, in most cases subject to formal ratification by their governments. Members of the UN may become members by signing, "or otherwise accepting this Constitution," at any time. The states represented as observers in New York may automatically become members by acceptance prior to the first session of the Health Assembly. Other states (presumably Germany, Japan, and Spain) may apply, but will require a majority vote of the Assembly for admission. Thus, the WHO is a far wider world organization than it has been possible to create in any other field.

In its scope of activities, too, the WHO is admirably broad. Its Constitution defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." It states that "The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition." The Organization will specifically "foster activities in the field of mental health, especially those affecting the harmony of human relations." It will not—as has been proposed in certain quarters in the United States—take the fantastic step of excluding medical care from the field of health. It specifies that a fundamental function of the WHO is "to study and report on, in coöperation with other specialized agencies where necessary, administrative and social techniques affecting public health and medical care from preventive and curative points of view, including hospital services and social security." The Constitution recognizes responsibilities for promoting "the improvement of nutrition, housing, sanitation, recreation, economic or working conditions" and other aspects of environmental hygiene. It notes the importance of "developing an informed public opinion among all peoples on matters of health." It proposes to "promote and conduct research in the field of health by the personnel of the

Organization, by the establishment of its own institutions or by coöperation with official or non-official institutions of any Member with the consent of its government."

The Organization will "act as the directing and coördinating body on international health work." It will have authority to adopt regulations, with respect to sanitary and quarantine requirements designed to prevent the international spread of diseases, as to nomenclature of diseases and causes of death, and as to standards for biological and pharmaceutical products. These regulations will come into force for all Member States except those which reject them, or vote reservations in regard to them, within a specified period. The Organization will establish administrative and technical services (including statistical and epidemiological services) as may be required. Furthermore, it will "assist governments upon request, in strengthening health services" within their respective states. It is of special importance that the Organization is not limited to action through the Social and Economic Council. It "shall have authority to make recommendations to Members with respect to any matter within the competence of the Organization"; and the Director-General may establish direct relationships with the health organizations of Member States which permit such contact. Under the Constitution, all Member States agree to report annually to the Organization any action taken in improving the health of its people (with particular respect to recommendations made by the Organization); to provide data on health regulations and statistics pertaining to health published within the State; and to furnish such statistical and epidemiological data as may be called for by the Health Assembly.

The WHO will include three major organs, the Health Assembly, the Executive Board, and the Secretariat. The Assembly will meet at least once a year and will include three delegates (qualified by technical competence and preferably representing the national health administration) from each member state. The Assembly will determine general policies, name the Member States entitled to designate the members of the Executive Board, and appoint the Director General. It will supervise the financial policies of the Organization, and establish its budget. The Board, of 18 persons serving for terms of three years, will meet at least twice a year and will act as the executive organ of the Assembly, taking on its own initiative any steps necessary to deal with epidemics and to participate in disaster relief. It will prepare the agenda for the Assembly and offer to the Assembly its recommendations as to the program of the Organization. The Director-General will appoint the staff of the Secretariat and serve as the chief technical and administrative officer of the Organization.

The budget will be prepared by the Director-General and approved by the Board. Subject to agreement with the United Nations, the budget will be finally approved by the Assembly and the expenses apportioned among the Member States. The Organization will be "brought into relation with the United Nations as one of the specialized agencies referred to in Article 57 of the UN Charter." The Organization may coöperate with non-governmental international organizations and (with the consent of the governments concerned) with national organizations, both governmental and non-governmental. By a two-thirds vote of the Health Assembly, it may take over the fuctions and obligations of any other international agency in the health field. The assumption of the work of the Health Section of the League and of the Paris Office was specifically provided for by action taken at New York.

One of the most important elements in the program is the provision for the establishment, within geographical areas determined by the Assembly, of Regional Organizations, as integral parts of the parent body. Each such area (after the approval of a majority of the Members in that area) will have its own Regional Committee and Regional Officers. The Director of the Regional Office will be appointed by the Board in agreement with the Regional Committee. In connection with this part of the Constitution, the New York Conference faced one of its most difficult problems. The Pan American Sanitary Bureau, under the able leadership of Dr. Hugh S. Cumming, has had a long and distinguished history of achievement in the field of regional coöperation for the promotion of public health. On the other hand, it would be clearly impossible to recognize an autonomous organization of this type in one area alone. An independent Pan American Sanitary Bureau would be supplemented by an independent Pan European Sanitary Bureau, an independent Pan Slavic Sanitary Bureau, a Pan Asiatic Sanitary Bureau; and the entire conception of a World Health Organization would dissolve in chaos. The Conference handled this thorny question in Article 54 of its Constitution which reads as follows: "The Pan American Sanitary organization represented by the Pan American Sanitary Bureau and the Pan American Sanitary Conference, and all other inter-governmental regional health organizations in existence prior to the date of signature of this Constitution, shall in due course be integrated with the Organization. This integration shall be effected as soon as practicable through common action based on mutual consent of the competent authorities expressed through the organizations concerned." This was in principle a sound and statesmanlike treatment of the problem; it is most essential, however, that its detailed solution should be worked out promptly and in accordance with the vital necessity that all special and local interests should be merged in a world-wide system of health promotion.

The New York Health Conference was, perhaps, the most heartening demonstration of international solidarity which has emerged in this difficult post-war period. Its spirit was altogether admirable in the coöperation displayed in furthering the progress of science and the advancement of the welfare of mankind. The Constitution itself is a model of thoroughness and clarity. As Dr. Parran said at the closing session, the World Health Organization "is a collective instrument which will promote physical and mental vigor, prevent and control disease, expand scientific knowledge and contribute to the harmony of human relations. In short, it is a powerful instrument forged for peace."

In our whole-hearted satisfaction with the structure erected at New York, it would be ungracious to forget those who laid the foundations for this structure in the past. The Health Section of the League of Nations had much the same machinery now proposed. The Office Internationale functioned in a sense as its Assembly. The Health Committee of the League corresponded to the new Executive Board. The Health Secretariat of the League offered—in competence and in devotion—a model for the new Secretariat-to-be. The World Health Organization will be far stronger than the Health Section because it has its own Assembly, its program of regional organization and much more definite powers than the Health Section ever possessed. Yet the Health Section accomplished notable tasks, in the establishment of a world system of epidemiological intelligence, in the standardization of biologic products, in the evolution of procedures for the control of malaria and cancer and other diseases, in the organization of world-wide programs for nutrition and housing. Its staff has continued to work

even during the years of war; and one member of that staff (Dr. Y. M. Biraud) served as Secretary of the New York Conference. The members of the one-time Health Committee and its staff have deep satisfaction in the certainty that its pioneer work will be carried forward, under the most favorable auspices, to a conclusion fraught with the benefits of fuller and more abundant health for all the peoples of our "One World."

IMMUNIZATION AGAINST INFLUENZA

FOR some years there has been suggestive evidence that the use of suitable vaccines may lead to marked increase in the titer of antibodies circulating in the blood stream. The work of the Commission on Influenza of the Board for the Investigation and Control of Influenza and other Epidemic Diseases of the Preventive Medicine Service of the U. S. Army under the chairmanship of Dr. Thomas Francis, has brought this procedure into the field of actual military public health practice.[1]

The investigations of this Commission in 1942–1943 solved the problem of preparing a serologically effective, reasonably stable vaccine, free from any serious ill effects. They did this by cultivating viruses of influenza Types A and B in an allantoic fluid, inactivating the viruses by formalin and concentrating the protective material by ingenious methods.

In the winter season of 1943–1944 the first opportunity came for large-scale tests of the actual efficacy of the procedure. In six different localities (from New York to California) almost identical experiments were set up. In general, at each of the institutions concerned, groups of 1,000 to 3,000 young men in military service were vaccinated, half of them with a vaccine prepared from both A and B viruses, and the other half (alternately chosen in the same group) with formalized saline as a control. When a sharp national epidemic of influenza A broke out in November (one of the two most severe epidemics since 1918–1919) the stage was set for a rigorous test.

The case incidence during the epidemic for the unprotected subjects varied from 60 per 1,000 at California to 100 per 1,000 at Cornell. The comparative rate for the vaccinated subjects varied from 13 at Iowa to 43 at Cornell. In a given locality, the incidence rate was lower among the vaccinated by 70–80 per cent at Iowa, Michigan, and Minnesota Universities, and at universities in the New York–New Jersey area. At Cornell, the reduction was only 57 per cent; and at California, only 35 per cent. At Cornell, only half of the subjects who were clinically ill proved serologically positive; and at California the epidemic was a mild one (with only 26 cases in the peak week). In general, if we take the entire group of over 3,000 vaccinated men and over 3,000 controls, the vaccine would appear to have reduced incidence to one-third of its severity among controls. Dr. Francis concludes that these results "show clearly that subcutaneous vaccination of a human population with inactivated influenza virus vaccine exerts a pronounced effect upon susceptibility to influenza A."

Complete results from the extensive later use of influenza vaccines in the Army have not yet been made public; but one significant report has been issued by Francis, Solk, and Brace [2] on experience with influenza B during the winter of 1945–1946. At the University of Michigan, there were 600 Army students who had been subcutaneously vaccinated in October, 1945, with combined con-

centrated influenza A and B vaccines prepared from infected allantoic fluid. During an epidemic of influenza B which occurred in November, the experience of these men was compared with that of 1,100 men in another service unit who had not been vaccinated. The respective incidence rates (for hospitalized cases) were 99 per 1,000 for the unprotected and 11 per 1,000 for the protected group.

In considering the practical usefulness of such a procedure, the duration of the protection afforded is a point of major importance. The results of certain investigations indicated that, in comparing protected and unprotected groups, the superiority of the vaccinated group was sixfold in the second week after inoculation and less than twofold in the sixth and seventh week. Francis points out, however, that this apparent falling off in efficiency is probably due to the development of acquired immunity in the control group. He, himself believes that immunity due to inoculation is rather prolonged.

Finally, it is of great significance that in both types of influenza, an epidemic is preceded by a period (of perhaps two weeks) in which the presence of the virus may be detected by laboratory tests of well individuals. Such tests might be used as a warning sign calling for immunization of a threatened group in advance of the actual epidemic.

All in all, it would seem probable that immunization against influenza may become a part of civilian public health procedure before may years have passed.

A recent contribution from Henle and his colleagues at Philadelphia [3] provides valuable criteria as to the details of the process of this procedure, based on its influence upon antibody titer.

REFERENCES

1. Francis, *et al.* A series of seven papers for the Commission on Influenza occupying the entire issue of the *Am. J. Hyg.*, 42:1 (July 1), 1945.

2. Francis, Solk, J. E., and Brace, W. M. The Protective Effect of Vaccination Against Epidemic Influenza B. *J.A.M.A.*, 131:275 (May 25), 1946.

3. Henle, *et al.* Experiments on Vaccination of Human Beings against Epidemic Influenza. *J. Immunol.*, 53:75 (May), 1946.

A.P.H.A. membership application blank on page XXXI.

LETTER TO THE EDITOR

To the Editor:

The over-riding problem which health workers in the field of venereal disease control face today is that of finding new, infectious cases. The essentials of that problem were well stated in the editorial, "Case Finding in the Control of Syphilis" which appeared in the *Journal* for May. The issues and problems of technique posed in this editorial, and the directions in which action is indicated, constitute a challenge to all health workers.

There is, however, one point in this editorial which I feel merits some elaboration and clarification lest a basic venereal case-finding device be misapplied by those less cognizant of the many ramifications of the problem.

In discussing contact investigation (direct epidemiologic investigation) the editorial states that "the variable lengths of the incubation period, combined with the promiscuity of the patient, makes it impossible, in many cases, to predetermine who, among all the contacts, *is* the source; hence many persons must be identified, found, and examined, in the hope that the source will be among them."

Although it is obvious from other statements in your editorial that you realize the search must be made for *all* infections which have occurred—not only the "source" individual but also all those to whom disease may have been passed on during the time from infection to discovery—I am fearful that the above quotation may imply that the identification and treatment of the source is the primary object of the epidemiologic investigation.

In order to prevent the spread of venereal disease, contact investigation should locate cases in the early infectious stages and before the infection has been spread. Although locating the source of infection is undoubtedly important, too much emphasis has been placed upon it, and too little upon locating "spread" contacts. From a public health point of view, the distinction is somewhat immaterial; the presence of infectious disease at any point in the chain of contacts is of prime importance.

All too often, also, the so-called "sources" have passed into the latent stage before they are located and examined. Persons to whom the patient has given the disease are more likely to be in the open lesion or pre-lesion stage when examined and offer one of the best opportunities for the prevention of the further spread of the infection.

Interviewers therefore should attempt to obtain the names of all exposures within a reasonable period and not confine themselves to the search for the "elusive source."

I feel that this matter is of some considerable importance. Any consideration you may be able to give this letter with respect to publication in the *Journal* will be deeply appreciated.

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Medical Director
Chief, Venereal Disease Division
U. S. Public Health Service
Washington, D. C.

Report of the Committee on Constitution and By-Laws

of the

American Public Health Association

(Submitted July 23, 1946)

THE Committee on Constitution and By-Laws presents herewith a revision of the Constitution which is proposed for adoption at the Annual Meeting in November. This revision of the Constitution, together with a proposed revision of the By-Laws, was presented to the Governing Council for its information and suggested changes at the Annual Meeting held in New York in 1944. Since the proposed revision of the Constitution transfers certain provisions now in the By-Laws, the adoption of the revised By-Laws is contingent on adoption of the revised Constitution by two-thirds of the Fellows present and voting at the Annual Meeting. It is the desire of the Committee on Constitution and By-Laws to afford to each Fellow voting on a change in the Constitution a full opportunity to express his opinion on the details of the revision. Nevertheless, it is the considered opinion of the committee that in this instance the vote, of necessity, will have to be on the revised Constitution as proposed as a whole, since any adjustment of the details would upset a closely interwoven relationship with the By-Laws.

The proposed changes consist primarily of a different organization of the material, a different system of designating the sections and sub-sections of the several articles, and the transfer of two provisions from the By-Laws to the Constitution. Secondarily, there are a few substantive changes which will be discussed later in detail. The committee has sought to avoid changes over which there might be controversy so that the general purpose of more orderly arrangement, improved designation of sections, and elimination of needless repetition could be effectuated. It is felt that if this overall purpose were accomplished, any desirable substantive changes could be more easily made at later meetings.

Articles I and II of the revision remain unchanged. Article III is taken in substance from Articles III and V of the Constitution and Article I of the present By-Laws.

The existing Article III is divided into Articles IV and V, the former dealing with the organizational features of the Governing Council, the latter with its functions. The present Article III has a quite complicated and unusual system of designating sections and sub-sections. It is believed that the separation into two Articles, the changes in notation, some changes in wording and in the order of the paragraphs, will make reference easier and perhaps clarify the intent in certain instances.

Existing Article IV is renumbered Article VI. It is otherwise unchanged.

A new Article VII is inserted, transferring from the By-Laws certain Sections of Article III of the By-Laws. These establish the Executive Board, prescribe certain of its duties and certain restrictions in the Constitution where they belong more properly than in the By-Laws.

Article V, providing for amendments,

is renumbered Article VIII without change.

The substantive amendments are:

(Existing Article III, Section E, paragraph 4—new Article III, Section 1.) To withdraw authorization to the Governing Council "to recognize Associated Organizations." This provision has been in the Constitution since 1940. It was inserted in an attempt to meet a special situation, has never been used, and its meaning is so obscure that it probably never would or should be used.

(Existing Article III, Section F, new Article IV, Section 4.) Changes a quorum of Governing Council from "10" to "20" members.

(Existing Article III, Section E, 7—new Article V, Section 5.) Eliminates the requirement of a report from the Executive Board including "a definitely formulated statement of a program of the major activities proposed for the ensuing year," in addition to another report from the Chairman of the Executive Board reviewing the accomplishments of the preceding year. The committee believes that the report of the Board can be eliminated if its chairman includes in his report a statement of contemplated activities for the ensuing year.

(New Article VII, Section 4.) Grants authority to the Executive Board to designate, during a period of emergency only, an Assistant Treasurer with limited powers. This authority is necessary in order to permit the Association to pay its bills in the absence or disability of the Treasurer.

This Section also provides authority for the Executive Board to elect a Treasurer until the next meeting of the Governing Council, in the event of a vacancy in that office.

(New Article VII, Section 5.) Changes a quorum of the Executive Board from "4" to "5" members.

For the information of Fellows, and as a notice to the members of the Governing Council, a summary of the reasons for proposed changes in the By-Laws is presented herewith.

Article I. Membership and Dues. In the present By-Laws Article I is very long, somewhat involved and repetitious. In the proposed By-Laws it is divided into five articles dealing separately with Fellows, Members, Affiliated Societies, Dues and Discontinuance of Membership, respectively.

The following changes are to be noted:

1. The provision for classes of membership has been transferred to the Constitution.

2. Section 1 is unchanged in substance.

3. Section 2 defines "established professional standing" as in the present By-Laws except for the recognition of the degrees of Master of Public Health and Diploma in Public Health. However, this section deals only with the criteria, omitting the provisions for the election of candidates.

4. Sections 3 and 4 provide for the handling of applications for Fellowship and the mode of election. These provisions are unchanged in substance, except as follows:

(1) Applications falling under criteria (a) and (b) of Section 2 are subject to approval by a majority vote of the Committee on Eligibility. At present there is no provision for this committee to act on such cases.

(2) The requirement for "unanimous" approval by a Section Council under criteria (c), (d), and (e) is changed to "two-thirds," and "unanimous" approval of the Committee on Eligibility under criterion (c) is changed to "two-thirds." The Committee on Constitution and By-Laws believes these heavy majorities provide ample safeguards as to quality and protect

the individual applicant from the veto of a single member of the reviewing bodies.

5. Section 5 states that the rights and privileges of Fellows shall include the rights of members. While this has been an assumption, it is now nowhere specifically stated.

Article II deals with Members, Life Members, and Sustaining Members. The rights and privileges of Members are stated categorically. They are no different from those stated or implied in various sections of the present By-Laws.

Article IV proposes a substantive change to increase the dues of Sustaining Members to not less than $100 per annum. This increase is recommended by the Executive Board after a careful review of the question.

Article V provides for Discontinuance of Membership. The three sections are taken from Article I, subdivisions C, D, and B.

Article VI, Publications, is a transfer of present Article IX. It contains no changes, except that the *American Journal of Public Health* is named the official journal of the Association.

Article VII prescribes the method of nominating and electing the Elective Members of the Governing Council. There are no changes, except that the list of nominees must be published not less than thirty days prior to the annual meeting, the ballots prepared so that the names appear in order determined by lot, and that the polls shall open on the first day of the annual meeting, and close at a time determined prior to their opening. It also provides that the Governing Council, rather than the Executive Board, shall determine precedence in tie votes.

Article VIII prescribes those functions of the Executive Board not transferred to the Constitution. It eliminates, however, the duty of confirming appointments to Section Committees. The Section Secretaries requested this change because of delays caused to such committees in awaiting confirmations. Furthermore, in no instance has the Executive Board challenged a Section appointment. This provision has also been removed from the Articles (X and XI) pertaining to Committees and Sections.

Article X. Committees. No substantive changes, other than that mentioned above, have been made in this Article. Some provisions no longer needed have been dropped and some changes in wording are proposed.

Article XI contains the substantive change above noted under Article VIII and prohibits the publication without approval of the Governing Council of resolutions passed by a Section as expressing a policy of the Association.

Article VIII, Finances, of the present By-Laws becomes Article XII without change.

Article VI, Meetings, becomes Article XIII with some change in language defining the "annual meeting."

Article X, Amendments, becomes Article XIV without change.

As stated above, the proposed changes were submitted in detail to the Governing Council at its 1944 meeting. These detailed changes comprise nine pages of mimeographed material relating to the Constitution and thirty-one pages relating to the By-Laws. The existing Constitution and By-Laws, and the proposed revision are given in parallel columns, showing each transfer, each elision, and each addition. Copies of this are available at the Association's office and will be sent to any Fellow upon request. They are not being printed in the *Journal* because of the considerable paper and space that would be required.

EDWARD S. GODFREY, JR., M.D., *Chairman*
HAVEN EMERSON, M.D.
FRANKLIN M. FOOTE, M.D.
CHARLES E. SHEPARD, M.D.

PROPOSED REVISION OF THE CONSTITUTION of the AMERICAN PUBLIC HEALTH ASSOCIATION

Submitted by The Committee on Constitution and By-Laws

ARTICLE I NAME

The name of this Association, incorporated under the laws of Massachusetts, is the American Public Health Association.

ARTICLE II OBJECT

The object of this Association is to protect and promote public and personal health.

ARTICLE III MEMBERSHIP

Section 1. There shall be seven classes of constituents to be designated as Fellows, Honorary Fellows, Members, Sustaining Members, Life Members, Affiliated Societies, and Regional Branches.

Section 2. The right to hold office, except the office of Vice-President, or to serve as a member of the Governing Council, the Executive Board, or of a Section Council, or of a standing committee, or as the chairman of a committee of the Association or of a Section, or to vote for elective Councilors or on any amendment to the Constitution shall be limited to Fellows and to Life Members and Honorary Fellows who have been elected Fellows of the Association.

Section 3. The qualifications of the several classes of constituents, and the dues of each of them, the manner of their election, and their rights and privileges, except as specified in this Constitution, shall be established in the By-Laws.

ARTICLE IV GOVERNING COUNCIL COMPOSITION

Section 1. There shall be a Governing Council which shall consist of:

(a) The officers of the Association and the elective members of the Executive Board.

(b) The Chairman, Vice-Chairman, and Secretary of each Section, and the elective members of the Council of the Health Officers Section.

(c) One representative to be designated by each Affiliated Society.

(d) One representative to be designated by each Regional Branch.

(e) Thirty members of the Council, to be elected by the Fellowship of the Association, for three-year terms, one-third of whose terms shall expire each year. Such members of the Council shall be known as elective Councilors and shall be nominated and elected as provided for in the By-Laws. If an elective Councilor is elected a Section Chairman, Vice-Chairman, or Secretary, or an elective member of the Council of the Health Officers Section, or appointed the representative of an Affiliated Society, or of a Regional Branch, a Councilor to fill such vacancy shall be elected by the Governing Council. All vacancies while in office shall be filled by election for the unexpired term. After two consecutive terms, an elective Councilor shall be ineligible for reëlection to the Council during one Association year.

Section 2. The terms of all Councilors, except the representatives of Affiliated Societies and Regional Branches, shall begin at the end of the annual meeting at which they are elected, and shall terminate at the end of the annual meeting at which their respective terms expire; provided that newly elected Councilors shall have the right to attend meetings of the Council in an advisory capacity as soon as elected.

The terms of the representatives of Affiliated Societies and Regional Branches shall begin and terminate in accordance with the constitutions and by-laws of their respective organizations.

Section 3. The Officers of the Association shall be the Officers of the Council.

Section 4. A Quorum of the Council shall consist of twenty Councilors.

Section 5. Meetings of the Council shall be called by the Executive Secretary at the request of the President, or at the request in writing of any twelve Councilors. In the latter case, the call to the meeting shall be issued at least twenty days in advance of the meeting and shall state the purpose for which it is called.

ARTICLE V GOVERNING COUNCIL FUNCTIONS

The functions of the Governing Council shall be:

Section 1. To establish and amend the By-Laws of the Association.

Section 2. To establish policies for the Association and for the guidance of the Executive Board and the Officers.

Section 3. To consider all resolutions proposed for approval in the name of the Association, and to receive and act upon a report from a committee on resolutions appointed annually by the President.

Section 4. To approve all standards

promulgated in the name of the Association.

Section 5. To receive at its first session at the time and place of the annual meeting of the Association, a report from the Chairman of the Executive Board in which the work, the accomplishments, and the financial status of the Association during the year preceding such annual meeting shall be reviewed and a statement made of the major activities contemplated for the ensuing year.

Section 6. To establish Sections of the Association; to combine or discontinue them when necessary; to prescribe the qualifications of the members of Section Councils and the chairmen of section committees; to maintain coördination among Sections; and to formulate general rules governing their policies.

Section 7. To elect the Executive Board, the officers of the Association, with the exception of the Chairman of the Executive Board and the Executive Secretary, to elect Fellows, Honorary Fellows, Life Members, and Affiliated Societies, and to establish Regional Branches.

Section 8. To publish after each of its meetings an abstract of the minutes of such meeting.

ARTICLE VI Officers

The officers of this Association shall be a President, a President-elect, three Vice-Presidents, an Executive Secretary, a Treasurer, and the Chairman of the Executive Board. The officers, with the exception of the Chairman of the Executive Board and the Executive Secretary, shall be elected by written ballot of the Governing Council as provided in this article and in the By-laws. The President-elect shall serve as such from the close of the annual meeting at which he was elected to the close of the next annual meeting, when he shall automatically become President. As President he shall serve to the close of the next succeeding annual meeting. However, in case of the inability of the President to complete his term for any reason, the President-elect shall at once succeed to the duties of President, filling the unexpired term of his predecessor and his own term consecutively. Other officers, except the Chairman of the Executive Board and the Executive Secretary, shall serve from the close of the annual meeting when elected until the close of the next annual meeting, and all officers shall serve in any case until their successors are elected and qualified. A majority vote of the Councilors voting shall be required to elect, and if no candidate receives a majority vote on the first ballot, the candidate receiving the smallest number of votes shall be dropped after each ballot in succession until a majority vote is obtained. The Chairman of the Executive Board and the Executive Secretary shall be elected by the Executive Board, which Board shall define the duties and authority of these officers, respectively.

ARTICLE VII Executive Board

Section 1. There shall be an Executive Board, consisting of the President, the President-elect, the Treasurer, and six members, to be known as the Elective Members, elected for terms of three years each by the Governing Council. The Elective Members shall be at the time of their election past or present members of the Governing Council. The terms of the Elective Members shall begin at the close of the annual meeting at which they are elected and terminate at the end of the annual meeting at the expiration of their respective terms. The terms of two Elective Members shall expire each year in rotation.

Section 2. Acceptance of membership on the Executive Board shall terminate any appointment such Fellow may hold on any of the standing committees of the Association.

Section 3. It shall be the duty of the Executive Board to direct the administrative work of the Association; to act as the Trustee of the Association's properties; to elect the Members and Sustaining Members; and in general to carry out the policies of the Governing Council between meetings of the latter.

It may designate an Assistant Treasurer whose powers shall be limited to the disbursement of funds in accordance with duly authorized budgets for the ordinary conduct of Association business. Such power shall be exercised only during a period when, in the opinion of the Board, an emergency is created due to the absence or disability of the Treasurer. Such Assistant Treasurer may be a Fellow or a corporate fiduciary institution.

In the event of a vacancy in the office of Treasurer, the Executive Board shall have power to elect a Fellow to serve as Treasurer for the unexpired term.

It shall have such further powers and duties as may be prescribed in the By-Laws.

Section 4. A Quorum of the Executive Board shall consist of five members.

ARTICLE VIII Amendments

This Constitution may be amended by a two-thirds vote of the Fellows of the Association present and voting at an annual meeting, provided that the specific amendment to be acted upon is published in the official publication of the Association not less than thirty days prior to the meeting, and provided further that the amendment receives the approval of the Governing Council.

PROPOSED REVISION OF THE BY-LAWS
of the
AMERICAN PUBLIC HEALTH ASSOCIATION

Submitted by The Committee on Constitution and By-Laws

ARTICLE I FELLOWS

Section 1. Professional health workers who have been members of the Association for at least two years, and who are of established professional standing in the field of public health (whether employed by public or private organizations or in independent private practice) shall be eligible for election as Fellows, provided that the applicant shall have reached his thirtieth birthday at the time application for Fellowship is made and subject to the further conditions of this Article.

Section 2. The following persons shall be considered to have an established professional standing in public health for this purpose:

(a) A person who has rendered acceptable service for two or more years in a responsible public health position and who has been awarded in course a degree of Doctor of Public Health, Doctor of Science in Public Health, Doctor of Philosophy in Public Health, Doctor of Medicine with at least one year of graduate study in public health in a university, Master of Public Health, Diploma in Public Health or other equivalent degrees, according to standards approved by the Executive Board of the American Public Health Association.

(b) A person who has been awarded in course an academic or professional degree involving training in public health and who has been regularly engaged in health work for at least five years, having rendered meritorious service as a health officer or in responsible charge of work in either a public or private health agency.

(c) A person who has done notable original work in public health or preventive medicine of a character to give him a recognized standing.

(d) A person regularly engaged in health work for at least five years, who has given evidence of special proficiency, who has attained a recognized standing.

(e) A teacher of public health or one of its constituent sciences who has attained distinction as an expounder of the principles of public health or its constituent sciences. Such a teacher shall have had at least five years' experience as a teacher of public health subjects. Any years of experience as defined in paragraphs (b) and (d) that the applicant may have had shall be considered the equivalent of the same number of years' experience as a "teacher."

(f) A person not covered by the above, who has made substantial contributions to public health work in his chosen branch and who has attained a recognized professional standing.

Section 3. Every application for Fellowship shall be made on an approved form and shall be sponsored by two Fellows of the Association who shall be Fellows of the Section with which affiliation is desired, provided, however, that when affiliation with a Section is not desired, the sponsors may be any two Fellows in good standing in the Association. Fellows without Section affiliation shall be known as unaffiliated Fellows.

Section 4.

(a) When an application has been duly sponsored and otherwise completed, it shall be transmitted to the Administrative Office of the Association, which shall make note thereon of such knowledge as it may have concerning the standing of the applicant in the Association. The application shall be forwarded by the Administrative Office to the Secretary of the Section in which affiliation is desired for the action of the Section Council, and, when acted upon by the Section Council, he shall return it to the Administrative Office after he shall have endorsed thereon the action of the Section Council. When the application is for unaffiliated Fellowship, the Executive Board of the Association shall act in place of the Section Council. To be eligible for election, individuals applying for Fellowship under the provisions of subsections (a) and (b) of Section 2 of this Article shall require for approval a majority vote of the Section Council or the Executive Board. All other applicants shall require for approval a two-thirds vote of such Section Council or the Executive Board.

(b) When the application has been approved by the Section Council or the Executive Board, as above provided, it shall be voted upon by the Committee on Eligibility. Applications requiring a majority vote of the Section Council or Executive Board shall require for approval a majority vote of the Committee on Eligibility. All other applications shall require unanimous approval of the Committee on Eligibility. If approved, as above specified, and provided the name of

the applicant shall have been officially published at least fifteen days in advance, the application shall be voted upon by the Governing Council, and if approved by three-fourths of the vote cast, the applicant shall be declared elected a Fellow.

Section 5.

(a) A Fellow may belong to and vote in only one Section, but such affiliation may be transferred to another Section if approved by vote of a majority of the Council of the latter Section. Unaffiliated Fellows may become affiliated with a Section if approved by vote of a majority of the Council of the Section with which affiliation is desired.

(b) Fellows shall have all the rights and privileges provided for Members in addition to those specifically reserved to them by the Constitution and By-Laws.

Section 6. Honorary Fellows may be elected by a three-fourths vote of the Governing Council for distinguished service in public health. Honorary Fellowship shall not confer voting power but Honorary Fellows who have previously been Fellows of the Association shall retain all the privileges of Fellowship.

ARTICLE II MEMBERS

Section 1. Persons professionally engaged or interested in public health work shall be eligible for election as members by a three-fourths vote cast by the Executive Board when sponsored by two members or Fellows and after approval by the Committee on Eligibility. They shall be entitled to receive the official journal of the Association, to vote for the officers and members of the Council of the Section with which they are affiliated, and upon all motions and resolutions coming before such Section, to participate generally in its proceedings and to serve on committees, except as provided in the Constitution and By-Laws. A member may belong to and vote in only one Section, but such affiliation may be transferred to another Section if approved by vote of a majority of the Council of the Section to which change is desired. Unaffiliated members may become affiliated with a Section if approved by vote of a majority of the Council of the Section with which affiliation is desired.

Section 2. Individuals or corporations interested in public health may be elected to Sustaining Membership by a three-fourths vote of the Executive Board. Sustaining Members shall be entitled to receive the journal and such other publications of the Association as the Executive Board may designate.

Section 3. Upon the recommendation of the Committee on Eligibility, any individual member or Fellow of the Association may be elected a member for life. The dues for Life Members shall be $100.00, payable within one year after election. Flection to this grade shall not affect the privileges held by such an individual as a regularly elected Member or Fellow.

ARTICLE III AFFILIATED SOCIETIES

Section 1. A state or provincial public health association or similar regional society including more or less than a state, primarily composed of professional public health workers and organized for the same general objects as the American Public Health Association, may be elected by a three-fourths vote of the Governing Council as an Affiliated Society, provided that not less than twenty of its active members and at least one-half of its active members are members or Fellows of the American Public Health Association. Not more than one such society shall be admitted from the same area.

Section 2. A society applying for affiliation shall submit a copy of its constitution and by-laws, its last annual budget, a roster of its members, and such other evidences of its qualifications as may be required. It shall submit annually and at other times such reports on its financial standing, membership, and other matters as may be required by the Executive Board of the American Public Health Association.

Section 3. The Committee on Eligibility shall consider all applications for affiliation and report its recommendations to the Governing Council.

ARTICLE IV DUES

Section 1. Honorary Fellows and Life Members shall be exempt from the payment of annual dues. The dues of all other constituents are payable annually in advance.

Section 2. The dues for Members shall be $5.00, for Fellows $10.00, and for Sustaining Members $100.00 or more.

Section 3. The dues for Affiliated Societies shall be one per cent of their gross annual income, provided that the minimum dues per society shall be $10.00 per year, and provided further that for every Fellow or Member paying annual dues to the American Public Health Association, the Association shall remit to the Affiliated Society of which such person is a member the sum of $1.00 per annum.

ARTICLE V DISCONTINUANCE OF MEMBERSHIP

Section 1. Constituents of any class whose

dues are unpaid for six months or more shall be considered not in good standing. Constituents not in good standing shall not be entitled to any of the privileges or powers of membership, Fellowship, or affiliation. Good standing may be resumed upon the payment of all arrears and dues in advance for one year, provided the lapsed period is not greater than one year. The Administrative Office shall notify by registered mail all constituents who have been in arrears for a period of eleven months. The names of constituents in any class whose dues remain unpaid for one year or more and who have been duly notified as above provided shall be presented to the Executive Board which shall order the names of such constituents stricken from the membership roll. Constituents whose names have been stricken from the rolls in this manner may be again admitted in the manner provided for the election of new constituents in the class for which they make application, provided such person or organization complies with the eligibility requirements at the time the new application is made.

Section 2. If, in the opinion of the Executive Board, any member or Fellow of the Association permits the use of his name, or otherwise allows himself to be quoted or used for illustration in the advertising of a commercial product, in such a manner as to reflect discredit upon the Association, his Fellowship or membership in the Association shall thereupon be terminated.

Section 3. Upon the recommendation of the Committee on Eligibility the Governing Council may discontinue the membership, Fellowship or affiliation of any constituent. Three-fourths of the votes cast shall be necessary for such action.

ARTICLE VI PUBLICATIONS

Section 1. All publications of the Association and of its Sections shall be issued under the direction of the Executive Board.

Section 2. *The American Journal of Public Health* shall be the official journal of the Association. The Executive Board shall appoint a Managing Editor of the official journal and an Editorial Board of not less than five members to serve at the pleasure of the Executive Board. All papers and reports for the annual meetings are to be accepted with the understanding that they shall be the property of the Association for publication, unless this right is waived by the Managing Editor.

ARTICLE VII ELECTIVE COUNCILORS

Section 1. The Elective Members of the Governing Council shall be nominated and elected as follows:

There shall be a Nominating Committee composed of one Fellow elected by each Section at the preceding annual meeting, and an additional Fellow designated by the Executive Board, the latter serving as Chairman.

This committee shall present to the Administrative Office at least two months before the next annual meeting the names of at least twenty and not more than thirty Fellows of the Association selected with due regard to geographical and membership considerations as nominees for the Governing Council.

Upon the petition of twenty-five Fellows the Nominating Committee shall add the name of any Fellow to the nominees selected by it, provided such petition is received not less than fifteen days before the annual meeting.

Section 2. The Administrative Office shall publish to the membership not less than thirty days prior to the annual meeting the nominees selected by the Nominating Committee. Prior to the annual meeting it shall prepare ballots upon which the names of all nominees shall appear in order determined by lot and one such ballot shall be handed to each Fellow entitled to vote at the annual meeting upon his signing a receipt therefor.

Section 3. The polls for the reception of ballots shall be open at 9 A.M. on the first day of the annual meeting and shall close at a time to be determined each year by the Executive Board prior to the opening of the polls.

Section 4. The Fellows receiving the highest number of votes on a written ballot cast by the Fellows present and voting at the annual meeting shall be declared elected to fill existing vacancies. Should two or more candidates receive the same number of votes, the Governing Council shall, when necessary, determine by written ballot the order of precedence of such candidates.

ARTICLE VIII EXECUTIVE BOARD

Section 1. The Executive Board shall elect from its own membership a Chairman who shall serve in that capacity for such term as the Executive Board shall determine. It shall also designate such other officers of the Board as it may require for the conduct of its business.

Section 2. If a vacancy among the Elective Members of the Executive Board shall occur after the annual meeting, the President shall designate a nominating committee from the Governing Council. Such committee shall

nominate not less than three candidates for the vacancy, from among whom the candidate receiving the highest number of votes of the Governing Council in a mail ballot shall be declared elected to the Executive Board to fill the vacancy.

Section 3. In addition to those prescribed in the Constitution and in these By-Laws, the Executive Board shall have the following powers and duties:

(a) To plan methods for the procurement of funds.

(b) To approve the budgets for the Association's work.

(c) To conform to the policies of the Governing Council in the conduct of its work.

(d) To appoint the members of the standing committees, to authorize the establishment and to confirm the appointment of all other Association committees.

(e) To transmit a report of its proceedings and transactions to the Governing Council at least thirty days before each annual meeting.

Section 4. After two consecutive terms of three years an elective member of the Executive Board, except one serving as chairman, shall be ineligible for reëlection during one Association year.

ARTICLE IX NOMINATION OF OFFICERS

The officers elected by the Governing Council shall be nominated from the floor by that body.

ARTICLE X STANDING AND SPECIAL COMMITTEES

Section 1. There shall be four standing committees of the Association as follows:

(a) Committee on Eligibility.

(b) Committee on Administrative Practice.

(c) Committee on Research and Standards.

(d) Committee on Professional Education.

Section 2. The standing committees of the Association shall be appointed by the Executive Board which shall also designate their respective chairmen. Each standing committee shall designate from among its membership such other officers as it may require for the conduct of its business and shall control its policies within the limitations prescribed by the Governing Council and the Executive Board. The Executive Secretary shall be a member, ex-officio, and serve as secretary of each standing committee.

Section 3.

(a) The Committee on Eligibility shall consist of one Fellow to be elected by each Section and an additional Fellow elected by the Executive Board who shall serve as Chairman. Members shall serve for a term of two years.

(b) This committee shall pass upon the eligibility of Fellows, members and other constituents in accordance with the provisions of the By-Laws.

Section 4.

(a) The Committee on Administrative Practice shall consist of fifteen Fellows, twelve of whom shall be designated by the Executive Board to serve for a term of four years, the terms of three members expiring each year, and three of whom shall be elected annually by and from the Fellows affiliated with the Health Officers Section.

(b) This committee shall engage in the collection of information regarding current public health practices and analyze the material obtained to derive standards of organization and achievement. The findings and standards may be made available to public health workers through publications, information and field service under such conditions as the committee may establish. No standards shall be promulgated as the official and authorized judgment of the Association except with the approval of the Governing Council.

Section 5.

(a) The Committee on Research and Standards shall consist of fifteen Fellows representative of the various Sections of the Association appointed by the Executive Board. Members shall serve for a term of three years, the terms of five members expiring each year.

(b) This committee shall be responsible for carrying out research and the development of standards in the technical branches of public health service, and shall coördinate such research and standardization. This committee shall also be charged with the duty of reviewing from time to time standards already established. No standards shall be promulgated as the official and authorized judgment of the Association except with the approval of the Governing Council.

Section 6.

(a) The Committee on Professional Education shall consist of twelve Fellows appointed by the Executive Board. Members shall serve for a term of three years, the terms of four members expiring each year.

(b) This committee shall be responsible for carrying out research and the development of standards for professional education and training in public health work and shall perform such other functions as may be delegated to the committee by the Governing Council with the view of maintaining professional qualifications of high standard. No standards shall be promulgated as the official

and authorized judgment of the Association except with the approval of the Governing Council.

Section 7. Unless otherwise provided in these By-Laws, all other Association Committees shall be authorized and appointed by the Executive Board and the appointments of their members shall expire at the next annual meeting.

ARTICLE XI SECTIONS

Section 1. The Executive Board shall approve rules and regulations relating to the government of the Sections, and to the appointment of administrative committees. Each Section shall elect its own officers and shall name its respective Section committees. The right to hold office or to serve as a member of a Section Council or as chairman of a committee in a Section shall be limited to the Fellows affiliated with such Section.

Section 2.

(a) The Section Chairman, with the advice of the Section Council, shall appoint a Committee on Nominations from the Fellows affiliated with the Section at least fifteen days before each annual meeting. The Section Secretary shall be a member of such committee.

(b) The names of the members of the Committee on Nominations shall be announced at the first meeting of the Section at each annual meeting of the Association. The Committee on Nominations shall present at the second meeting of the Section a list of nominees for the Section officers, and for membership in the Section Council; provided that if the name of any Fellow be transmitted to the Nominating Committee over the signature of ten Fellows of the Section prior to the second meeting of the Section, the Nominating Committee shall add the name of such Fellow to its own list of nominees.

Section 3. The officers of each Section shall be a Chairman, a Vice-Chairman, and a Secretary, who shall be the representatives of the Section to the Governing Council of the Association, except as provided in the Constitution.

Section 4. New terms shall begin and old terms shall expire at the end of annual meetings. After five consecutive years in any elective Section office, except that of Secretary, a member shall be ineligible to reëlection to that office during one Association year.

Section 5. The Chairman, or in his absence the Vice-Chairman, shall preside at meetings of the Section.

Section 6. The Secretary shall prepare the scientific program of the Section for the annual meeting, subject to the recommendations of the Section Council, and shall submit same to the Administrative Office. He shall keep the minutes and other records of the Section, and shall transmit to the Executive Secretary of the Association a copy of the minutes of both the business and scientific sessions as soon as practicable after the close of the annual meeting of the Association. When unable to be present at meetings, he shall thoroughly instruct a substitute as far in advance of the meeting as possible.

Section 7. There shall be a Section Council composed of the three officers of the Section and five members, to be known as the elective members, each of whom shall be elected for a term of five years; provided that when a Section is first established one member shall be elected to serve for one year, one for two, one for three, one for four, and one for five years.

Section 8. The duties of the Section Council shall be:

(a) To recommend papers, and to make general recommendations in relation to the annual meeting program.

(b) To advise on Section membership and on Section policies.

(c) To submit annually to the Governing Council through the Executive Board a report of the transactions of the Section.

(d) To report annually to the Governing Council through the Executive Board on the plans, scope and policy of the Section during the succeeding year.

(e) To formulate rules of procedure for the Section.

(f) To consider and transmit to the Governing Council resolutions originating in the Section. Only resolutions approved by the Governing Council shall be published as representing the policy of the Association.

(g) To advise on the publication of papers and reports presented at the Section meetings.

(h) To advise with respect to the appointment of technical committees, subcommittees, or Section representatives on committees of the Association.

ARTICLE XII FINANCES

All remittances to the Association shall be deposited to the account of the Treasurer. The Treasurer shall be custodian of investments of the Association and shall disburse funds in accordance with duly authorized vouchers. With the approval of the Executive Board he may establish a drawing account for the Executive Secretary, who shall send to members of the Executive Board a financial summary of receipts and disbursements each month. Once each month, or oftener if called

for, he shall also forward to the Treasurer and to the Chairman of the Executive Board an itemized statement of all expenditures. The Executive Secretary, the Treasurer and the Assistant Treasurer shall be bonded at the expense of the Association in an amount to be determined by the Executive Board. The books of the Association shall be audited annually by certified public accountants to be appointed by the Executive Board.

ARTICLE XIII MEETINGS OF THE ASSOCIATION

There shall be one general meeting of the Association, to be known as the annual meeting which shall be held each year at a place selected by the Governing Council. Special meetings of the Association may be called by a majority vote of the Governing Council, the Executive Board, or the Association. In all proceedings of the Association, *Robert's Rules of Order* shall be official.

ARTICLE XIV AMENDMENTS

These By-laws may be amended by a two-thirds vote of those voting on the Governing Council during the annual meeting, provided that twenty-four hours prior written notice thereof has been given. The By-laws may further be amended by a two-thirds vote of those voting at any meeting of the Governing Council called for the purpose, provided that notice thereof shall have been given at least fifteen days prior to such meeting.

Credit Lines

A FORTHRIGHT APPROACH TO THE DIPHTHERIA PROBLEM

A general increase in diphtheria morbidity and mortality has been recorded most recently in the review published in the *Journal of the American Medical Association* July 27, 1946, p. 1053. In practically all parts of the United States and in some parts of Canada public health workers are faced by increases which appear to have wiped out the gains of several years of declining diphtheria rates.

Because of this situation Credit Lines here reproduces an actual account of what one state has done with the diphtheria program. This record of the New York State Diphtheria Conference Committee meeting reflects outstanding coöperation between the official state health and education departments, the state medical society, a voluntary health agency, an insurance company, and interested citizens. It reflects not only good epidemiology, but good community organization.

Present were the following:

State Department of Health: James E. Perkins, M.D., Deputy Health Commissioner, presiding; Hollis S. Ingraham, M.D., Director, Division of Communicable Diseases, and Robert F. Korns, M.D., Asst. Director, Division of Communicable Diseases.

State Department of Education: Cyrus H. Maxwell, M.D., Chief, Health Service Bureau.

Medical Society of the State of New York: Walter P. Anderton, M.D., Secretary, and Dwight S. Anderson, Executive Secretary.

Metropolitan Life Insurance Company: Donald B. Armstrong, Second Vice-President, and George M. Wheatley, M.D., Assistant Vice-President.

S.C.A.A. State Committee on Tuberculosis and Public Health: Homer Folks, Secretary, and Robert W. Osborn, Assistant Executive Secretary.

Upon authorization by State Health Commissioner, Dr. Edward S. Godfrey, Jr., it was stated that the purpose of the meeting was to consider ways and means of checking a significant rise in diphtheria prevalence in up-state New York. A similar committee had directed the coördinated services of the represented agencies during the State Diphtheria Eradication Campaign of 1926–1930.

Dr. Perkins explained that the present meeting was to assay the problem, to consider recommended procedures, to determine the extent of the proposed immunization campaign, and to review what each agency represented might contribute to a coördinated and concentrated effort to further protect children against diptheria.

1. *Statement of the Problem:*

Dr. Ingraham presented tables showing diphtheria cases and deaths from 1908 to 1945 inclusive for the state, outside of New York City. From 1940 to 1944 inclusive, morbidity and mortality rates were relatively minor. In 1945 the cases (123) more than doubled the number reported in 1944, and there were more than four times as many deaths (13). A monthly tabulation for 1944 and 1945 and through April 15 of 1946 reveals a substantial increase in both cases (89) and deaths (9) for the first 3½ months of 1946. It is necessary to go back to 1935 and 1936 to find a comparable prevalence.

The fatality rate has varied only slightly through the years, regardless of the number of cases. It was pointed out that there is no evidence as to an increased virulence of the diphtheria bacillus. The increased prevalence of the disease in the Eastern seaboard and the Eastern north central states possibly may be derived from the increase of the disease in Europe.

There is a difference as to cases and deaths by sex, inasmuch as morbidity is higher among adult females than among adult males. Fatality rates are higher among males. The age distribution of cases has remained essentially constant in the last thirty years. However, during the same time there has been a tendency for deaths to occur less frequently among the preschool group and more often in the adult group. On the whole the figures for later years are not particularly significant because of the small numbers involved.

"Spot" maps were exhibited showing the distribution of diphtheria cases over the state. There was no great concentration of cases in any one locality, except that, for 1946, Buffalo has exhibited the greatest deviation from figures for previous years, with a marked increase of cases and deaths.

There have been cases and deaths of children with previous immunization history, but no deaths where there have been two initial immunization treatments, followed by a "booster" dose upon entering school.

2. *Recommended Immunization Procedures and Objectives:*

Dr. Korns reviewed State Health Department recommendations as to procedures as follows:

Questions have arisen concerning the effectiveness of artificial active immunization against diphtheria, specifically the occurrence of a sizable number of cases of the disease in previously immunized persons. However, careful study of such records indicates that these apparent failures have been for the most part due to inadequate initial immunization or to the prolonged lapse of time between immunization and onset of diphtheria. Experience gained in Halifax and elsewhere clearly indicates that the attack rate among the non-immunized is seven to ten times as great as among the immunized. Evidence based on Schick test surveys in Kingston, N. Y., indicates that during the period 1922 to 1938 a marked reduction in naturally acquired immunity to diphtheria has occurred in children under 10 years of age. Presumably this reduction is a reflection of the reduced incidence of cases and prevalence of carriers.

Bearing this fact in mind, plus the occurrence of small outbreaks of diphtheria recently in Kingston and Schenectady, both of which communities, according to accepted standards, were thought to be adequately immunized, it seems indicated that the standards as to the adequacy of community protection against the disease need to be raised. Thus, instead of a minimum of 30 per cent of children under 5 years immunized in order to prevent outbreaks of this disease, this minimum might well be raised to 55 per cent or higher. Emphasis should be placed on the need for a booster dose of diphtheria toxoid on entry into school.

The schedule of injections being recommended by the Department agrees with the recommendations of the American Public Health Association and is presented below:

(1) Alum precipitated toxoid is preferred to fluid toxoid since it has been clearly shown to be a superior antigenic stimulus.

It is urged that initial immunization consists of *two* injections, 1 ml. each, of precipitated toxoid administered *one month apart*, the *first* to be given *at 6 months* of *age*.

(2) To all children receiving initial immunization in infancy, a *booster* dose of 1 ml. alum precepitated toxoid is strongly recommended at the time of *entry* into *school*.

(3) Children of preschool and school age who were not immunized as infants should receive the course of injections mentioned in (1) above.

(4) In the face of the epidemic occurrence of diphtheria in a given community, booster doses of toxoid might well be given to all children who have not been so immunized during the previous three years.

(5) The occurrence of diphtheria in a household should lead to the immediate administration of toxoid to other household members including adults. Preliminary Schick testing and Moloney testing for sensitivity to toxoid may be indicated in adults. Depending on the results of such tests, a modified course of diphtheria toxoid may be given.

It was the prevailing opinion among committee members that the Schick test should have no mass application, but that physicians might well wish to use it with private patients. It was brought out in the discussion that one of the important contributing causes in the recent deaths from this disease was the failure of physicians to institute adequate early treatment. It is strongly urged that diphtheria antitoxin be administered immediately by the physician to all patients in whom he suspects the diagnosis of diphtheria. The practice of awaiting the reports of laboratory examination of nose or throat cultures before administering specific serum therapy, despite the presence of clinical evidence of diphtheria, is to be strongly discouraged.

The Department does not discourage the use of multiple vaccines, although the combination of diphtheria toxoid with whooping cough vaccine is not favored because immunization against the latter disease is needed at an earlier age. The administration of whooping cough vaccine to 3 month old infants is now urged. Vaccination against diphtheria is of little value in infants under 6 months of age, since the presence of circulating antitoxin prevents adequate antigenic response.

3. *Consideration of Scope of Campaign to Be Undertaken:*

It was the consensus of opinion that the increasing prevalence of diphtheria merited rather vigorous and sustained remedial efforts by all of the agencies concerned, with particular attention to localities having a marked increase in cases and deaths, and where there has been a low percentage of immunization of children.

4. *Consideration of Coördinated Activities:*

Mr. Folks pledged the whole-hearted cooperation of the State and Local Committees on Tuberculosis and Public Health along the lines contributed during the Diphtheria Campaign of 1926–1930. *Mr. Osborn* explained that of the 62 County and City Associations, 50 have full-time executive secretaries; 9 have part-time workers, leaving only three without executive service. Four Field Advisers are available to help interpret to these Local Associations the need for and plans of the undertaking. The monthly *S.C.A.A. News* will be available for publicity and assistance will be given in the distribution of educational materials and local promotional efforts.

Dr. Perkins presented leaflet and poster materials now available from the State Health Department and indicated that it might be possible to produce a movie trailer for theaters in the near future.

Dr. Armstrong mentioned the following Metropolitan Life Insurance Company educational items in production:

A revision of diphtheria leaflet with a time-table for immunization treatments

A new immunization leaflet with time-table covering diphtheria, smallpox, and whooping cough

A booklet on communicable diseases of childhood

A series of "spot" broadcasts on WJZ and WOR which could include messages on diphtheria

He also emphasized the value of talking slide-films for school groups. These can be produced rather quickly and without too much expense.

Dr. Perkins said the Department had produced such material and that a slide film was under way on farm labor camps. The group opinion was that it is not necessary to produce expensive posters.

Dr. Maxwell indicated the value of a placard for the office of the private physician, stating that the health officer recommends immunization treatments against diphtheria, smallpox, and whooping cough, etc.

Dr. Anderton and *Mr. Anderson* stated that the columns of the *State Journal of Medicine* were open for editorial statements and requested the Department to send material soon for consideration, especially emphasizing recommendations on treatment.

Dr. Perkins and *Dr. Maxwell* discussed possible procedures for giving a "booster" dose of toxoid to kindergarten and first grade students and initial treatments to school children not previously immunized.

Dr. Maxwell agreed to examine records to ascertain the number of school children now needing "booster" and immunization doses. Plans will need to be formulated between the local health officer, school physician and county medical society as to routine set-up and facilities to administer immunization treatments in the schools and during Summer Round-ups.

Dr. Maxwell invited the Department to submit materials to be mailed to school superintendents and principals.

The committee agreed that it would be well to meet in Albany within two months, at the call of the chairman, to proceed further with plans as outlined.

OHIO MAKES A START

Ohio has just put on a demonstration of what can be done by an organized public opinion exerting pressure upon a reluctant legislature. The recent special session of Ohio's 96th General Assembly appropriated $3,727,000 or nearly two-thirds of the $6,206,000 requested by Governor Lausche for the mental health program of the state.

Mental Hygiene in Action of the Cleveland Mental Hygiene Association (1101 Swetland Building, Cleveland 15) tells the story in its May-June issue. It reports, "By far the most significant and hopeful feature of the special session was the effective demonstration of wide public support for adequate mental health appropriations which the spokesman for several important state organizations, led by the Ohio Mental Hygiene Association, gave in the two days' hearings before the House Finance Committee."

Among the items for which the appropriation will provide are a change-over from a 12 hour to an 8 hour day for

employees in state institutions, operating budgets for new units in several of the state hospitals, improvements in other units, and supplementary budgets to meet increased costs of food, fuel, and clothing.

A requested appropriation of $25,000 for traveling mental hygiene clinics was denied on the ground that, according to the chairman of the House Finance Committee, they were "just a device to fill up mental hospitals."

It might also be added that "Bedlam, 1946," *Life Magazine's* article about Ohio's neglect of its mentally ill patients gave the leading organizations in the state ammunition for dramatizing the request for appropriations.

LIFE IS GOOD—EVEN WITH HANDICAPS

The American Red Cross has just released five pamphlets bound in as many colors designed to provide information for families and friends of veterans. The five subjects are: amputations, malaria, loss of hearing, loss of sight, and tuberculosis. In simple language these give the basic facts about these conditions and how the folks back home can help the returning veteran who is suffering from one of them, to lead a normal useful life despite the handicap. "The most important things in life are still his for the taking" is the golden text. These pamphlets should be in the hands of all families who have a returned veteran, or, in fact, any other member, suffering any one of these handicaps.

Prepared with the coöperation of the National Publicity Council the pamphlets are available from The American National Red Cross, Washington, D. C.

HOW TO BEAT ANTIVIVISECTION BILLS

The Medical Society of New York State has recently released a "Report on the Campaign Against Antivivisection Bills in the 1946 New York State Legislature." This is a very complete and exciting report of the highly effective program of education and propaganda that went into high gear from the time of the first faint rumors of an impending bill down to its final defeat in the State Assembly. It is an impressive record of high-powered publicity on a mature intellectual level shared in by topflight physicians and scientists.

The report, together with reports of Bernard DeVoto's "The Easy Chair" discussion of the genus vivisectionist in *Harper's Magazine*, and Dr. Norman T. Kirk's "Mice—Or Men?" in *Collier's Weekly*, can be secured from the Society, 292 Madison Avenue, New York 17.

The agency through which this activity was carried on was organized as Friends of Medical Research. This has now become a national organization—the National Society for Medical Research, conducted under the auspices of the American Association of Medical Colleges. Its chairman is Anton J. Carlson, M.D., who is also chairman of the executive committee of the American Association for the Advancement of Science. The offices are located at 25 E. Washington Street, Chicago 2, and the Executive Director is Ralph A. Rohweder.

CHRISTIAN SCIENCE AND CHEST X-RAY SURVEYS

The National Tuberculosis Association is to be congratulated for having secured a clarification of the stand of Christian Scientists on chest surveys. Walter W. Kantack of the Christian Science Committee on Publications for the State of New York writes as follows:

Christian Science teaches that examining the body in a search to see whether or not disease is present can bring on disease. Accordingly, Christian Scientists object to any requirement that would compel them to undergo x-ray and other examination in a search for tuberculosis and other diseases. They do not object to ordinary sanitary regulations, nor do they object to quarantine and other measures for the protection of the

public when a so-called contagious disease is epidemic.

However, unless there is good reason to believe that they are affected with an ailment which may be harmful to others, they feel that their right of the free exercise of their religion should be respected and that they should not be forced to submit to unwarranted medical requirements. Their religion teaches them to give strict obedience to existing laws and regulations, but they object to the extension of these laws and regulations in a manner that involves them in mass examination and experimentation based on medical theories.

The foregoing is a statement of the position of Christian Scientists as a whole. However, each individual Christian Scientist is free to act according to the dictates of his conscience. If he personally has no objection to x-ray examination, he may submit to it. It is a matter for individual determination. On the other hand, if he objects to examination, he should not be compelled or coerced into it. No health program should have priority over religious rights.

The promotion of good health is our common aim. Though we proceed from different bases of thought, we can and I'm sure we do have a spirit of the greatest friendship and goodwill.

IDEAS FOR ACTION

Credit Lines has received Vol. 1 No. 1 (June, 1946) of the quarterly *Ideas for Action*, published by The Citizens' Social Research Council, a group of sociologists, writers, and researchers, whose stated purpose is to "provide ammunition needed to build a better democracy." They invite manuscripts and give practically unlimited rights to reprint. The first issue has, among other items, an article on The Health of the Farmer, by Dr. Bernhard J. Stern, reprinted from his recent book *American Medical Practice* (Commonwealth Fund). They also report on some recent polls on What Americans Think About Medical Care. *Ideas for Action* is *15 cents* per copy, *50 cents* per year; its Editor is Alvin W. Gouldner; its offices are at 110–34 73rd Road, Forest Hills, Long Island, N. Y.

SAFEGUARDS TO CHILD HEALTH

"Future Health for Your Child" is the title of a gay little folder prepared by the Lederle Laboratories (30 Rockefeller Plaza, New York 20). Its cover has blond and brunette, classic and snub-nosed little boys and girls and endearing babies with curling wisps of hair.

Inside, the gay colors and charming children are continued to illustrate the story, in simple language, of immunization procedures for smallpox, measles, scarlet fever, typhoid fever, virus influenza, common colds, diphtheria, tetanus, and whooping cough, and the tuberculin patch test for tuberculosis.

The universal chorus for each presentation is "Only your physician can protect your child against the common childhood infections!"

Lederle Laboratories is one of the Association's 36 sustaining members.

PILLS ARE NOT THE ROYAL ROAD TO HEALTH

The *Health Bulletin* of the Virginia Department of Health (June, 1946, Richmond, Va.) uses the famous "Acres of Diamonds" lecture as the springboard for a very well written article, the burden of whose tale is that the greatest of health fortunes lies largely within the individual. The brisk daily walk, the controlled intake of nutritive food, the nightly health quota of sleep, fresh air, stimulants limited to personal tolerances and keeping worry under control—these make for personal health. A very valuable reminder when commerce sings its siren song about pills and potions, fads and fancies. The really smart men and women refuse "to follow the commercial or well meaning will-o'-the-wisp that offers an unattainable personal vigor on an arm-chair basis."

LOCAL GOVERNMENT COÖPERATION IN RECREATION

In Lynwood, California (1940 popu-

lation, 11,000), the city and two school districts will jointly finance and manage all public recreation activities—parks, playgrounds, tennis court—through a nine member recreation commission made up of city and school officials plus three members at large. The city council will make all appointments to the recreation commission, with the school boards submitting candidates for their representatives. To coördinate the facilities of the city and the schools in a unified recreation program, the commission may adopt rules and regulations governing public recreation, may appoint a director of playground and recreation activities, and may contract with the school districts to supervise all recreation activities carried on within the school grounds.

HELP FOR ANNUAL REPORTS

It is not too late to make use of *Annual Reports: How to Plan and Write Them* in planning that annual report that should be ready for the printer soon after the first of the year. One of the How-to-do-it Series of the National Publicity Council, this 40 page pamphlet tells you about the organization of your material, the format, the use of statistics, and other pointers. Written by Beatrice K. Tolleris, Staff Consultant of the Council, it is as easy to read as she hopes your annual report will be.

ILLINOIS LEARNS MORE ABOUT MENTAL HYGIENE

The Illinois Society for Mental Hygiene (343 South Dearborn, Chicago) sent out an imaginative packet in April. Included with its monthly report for April was the annual report number of its *Mental Health Bulletin* entitled, "Mental Health in Prospect," a reprint of a series of graphic charts published by the *Chicago Sun* with the general title "Mental Illness—Today's Problem, Tomorrow's Deficit." This chart ought to stimulate a lot of other thinking caps in publicizing the need for a different approach to and better facilities for the care of mental illness. The last item in the packet directs attention to the March, 1946, issue of the *American Journal of Sociology:* Reports by Twenty-three Social Scientists. In these articles the psychiatric and psychological aspects of the services are dealt with as well as the changes in rôle that attend the return to civilian life.

STUDENTS HEAR ABOUT PUBLIC HEALTH

The Public Health issue of *Building America* packs more into its 30 pages than one would have thought possible in twice as many pages.

The "Milestones in the Development of Public Health in America" start with the 1647 law to prevent pollution of Boston Harbor and go up to the passage of the Public Health Act of 1944. Some of the items in between are the mandatory isolation of smallpox cases in Massachusetts in 1701, the first school of medicine in 1765, the first state board of health in 1869, the organization of the A.P.H.A. in 1872, the establishment of the Food and Drug Administration in 1907, and the first school of public health in 1913.

Short chapters on voluntary agencies, on public agencies, a brief analysis of the varied services and personnel contributing to public health, where we have come and what remains to be done—these complete the brief but nevertheless complete story. The whole is illustrated with pictures, old and new, and with pictorial charts. There are extensive footnote references and a good brief bibliography which includes the Gunn-Platt *Voluntary Health Agencies* report, Dr. Emerson's *Local Health Units for the Nation,* Dr. Mustard's *Government in Public Health,* as well as Dr. Stephen Smith's *The City That Was,* which is a dramatic account of New York City's Sanitary Survey of 1864.

The Association for Supervision and Curriculum Development of the National Education Association (140 North 6th Street, Philadelphia) is to be congratulated for getting this material into the blood stream of education in this country. Each issue of *Building America* is designed as a separate study unit for schools, colleges, youth organizations, and the general public. Each is a factual illustrated study of a modern problem. Among other titles presented during its 11 year history are Chemistry at Work, Food, Health, Housing, Physical Fitness, Recreation, Safety, and Social Security.

GOOD HEALTH SPRINGS FROM THE GOOD SOCIETY

"Good health and physical fitness make for economic and social progress, but there is still more causation in the opposite direction between these factors." So concludes Comparative Health Factors among the States, an article in the February, 1946, *American Sociological Review* (Jones Hall 108, University of Minnesota, Minneapolis, bi-monthly *$4 a year*). Prepared by Gerhard Hirschfeld and Carl W. Strow, this article summarizes such factors as mortality rates, populations, sanitation, medical facilities, health insurance, economic resources, and cultural levels for the separate states, and attempts to rank the states as to health sanitation on the one hand and economic-cultural status on the other. Although the resulting ranks of the states are not identical for the two items, there is a high positive correlation of economic and cultural strength with good health. Hardly news, but bears frequent repetition and this is an interesting variation of an oft told tale.

TUBERCULOSIS IN INDUSTRY

The National Tuberculosis Association (1790 Broadway, New York 19) has just published a tentative edition of *Tuberculosis and Industrial Employment*. This is described as "a code of fair employment practice and guide for industrial physicians." It was prepared by Dr. Oscar A. Sander for the Committee on Tuberculosis in Industry. In a preface Dr. Kendall Emerson hopes that the report sheds some light on placement questions arising from the use of mass radiography into industrial medical practice. The emphasis of the report is not upon keeping the tuberculous out of industry but upon proper placement and supervision.

Underlining the report's message is a leaflet, *"Put Them to Work!"* Included also is the 1946 revision of the National Tuberculosis Association's *bibliography on tuberculosis and related subjects*.

MENTAL PUBLIC HEALTH EDUCATION

The recently organized National Mental Health Foundation (P. O. Box 7574, Philadelphia 1) makes its bow in the health education world with the first in a series of popular educational presentations prepared for national distribution. They are:

From Folly to Fetters to Freedom—an 8 page pamphlet which gives an historical sketch of the care of the mentally ill and a challenge toward improved standards of care and treatment.

If Your Child Is Slow—an 8 page illustrated pamphlet designed for sympathetic guidance of friends and relatives of the mentally deficient child, and

Will They Be Cured?—a 4 page guide for persons interested in the mental health movement.

The first is a particularly effective thumbnail history of the long road from the days when man was mad because a demon had seized him, to the present when, among the enlightened of the world, mental illness is as free from moral connotations as any other.

The first two pamphlets are *8 cents* each, the third *5 cents;* each is less in

quantity. Other popular pamphlets are promised at an early date.

SWIMMING POOL STANDARDS

The current edition of *Swimming Pool Data and Reference Annual,* 1946, (Hoffman-Harris, Inc., New York, Price *$3.00*) presents much of value to anyone considering the hygienic control, the operation and construction of swimming pools. The Recommended Standards for Design, Construction, Equipment and Operating of Swimming Pools, prepared by the Joint Committee on Bathing Places of the Conference of State Sanitary Engineers and the American Public Health Association is the leading section. Interspersed at appropriate paragraphs are the regulations of various states where such are not in general agreement with the standards recommended by the Joint Committee. Following this section are others dealing with engineering aspects of design, the operation, maintenance, and cost of swimming pools and desirable equipment. The value of swimming pools to a community and the use of swimming in convalescence are also discussed. A generous section of advertisements should prove of value to anyone interested in the procurement of services or equipment.

WEST VIRGINIA ANNUAL REPORT

The annual report of the West Virginia Department of Health for the year ending June 30, 1945, presents, among the recommendations of the Commissioner, J. E. Offner, M.D., the following:

1. Complete coverage of the state with full-time local health units staffed by qualified personnel
2. Revision of restrictive tax laws to permit adequate local financial participation in local health units
3. Passage of permissive legislation providing for the consolidation of county and city health departments

The Commissioner also recommends the creation of five new divisions in the State Department of Health: Hospital and Medical Care, Mental Hygiene, Food and Drugs, Public Health Dentistry, Degenerative Diseases.

Among the public health laws passed by the 1945 legislature, as indicated in Dr. Offner's report, is one by which qualifications of applicants for the position of State Health Officer are to be obtained by the Governor from the State Medical Association.

ENVIRONMENTAL CONTROLS FOR INDUSTRIAL PROCESSES

A recently received volume should be of interest to anyone working in the control of environmental conditions in various phases of industrial hygiene. It consists of lectures presented at an In-service Training Course in Environmental Controls for Industrial Processes, October 2–4, 1945, at the School of Public Health, University of Michigan. It is liberally illustrated and there are many sketches and figures that assist in making the text clear and understandable.

Included among the lectures is one of a general nature outlining the general problems involved in the control of environmental factors presenting hazards in various industrial occupations. In addition, there are sections on ventilation including design and equipment. There are specific sections dealing with hazards in the welding industries, in metal cleaning processes, painting and electric plating. A final section deals with the general subject of industrial housekeeping and sanitation. Included among the lecturers at the Inservice Training Course were R. R. Sayers, W. N. Witheridge and Frank A. Patty, all Fellows of the A.P.H.A., and Thomas F. Mooney, member, A.P.H.A.

As long as the supply of the reports is available, copies can be obtained free of charge by writing to the School of Public Health, University of Michigan, Ann Arbor, Mich.

BOOKS AND REPORTS

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted. All books reviewed in these columns may be purchased through the Book Service.

Advancing Fronts in Chemistry: Vol. II, Chemotherapy.— *Edited by Wendell H. Powers. New York: Reinhold Publishing Corp.*, 1946. 156 pp. Price, $3.25.

Dr. Neil E. Gordon arranged a symposium on chemotherapy in the spring of 1945 at Wayne University. This useful little volume contains six of the seven lectures in the series, the discussion by Dr. H. E. Carter of the University of Illinois on antibiotics unfortunately being omitted.

The general pattern of the reviews follows a historical survey of an interpretation of recent developments, and suggestions of unsolved problems. Photographs and biographical sketches of the authors add much to the attractiveness of the volume. The symposium includes the following subjects: Chemotherapy in Experimental Tuberculosis by W. H. Feldman of the Mayo Foundation Graduate School, University of Minnesota (20 pages); Synthetic Antispasmodics by F. F. Blicke of the University of Michigan (7 pages); Chemistry of the Sulfa Drugs by E. H. Northey of the Stamford Laboratories of the American Cyanamid Company (14 pages); The Antimalarial Problem by H. S. Mosher of Pennsylvania State College (18 pages); Organometallic Compounds as Chemotherapeutic Agents by C. K. Banks of Parke, Davis and Company, Detroit (34 pages); and Past Developments and Present Needs in the Chemotherapy of Parastitc Diseases by W. H. Wright of the National Institute of Health, Washington.

The authors are to be congratulated for their skill in surveying so successfully the significant current fields of chemotherapeutic interest. The volume is an excellent introduction to the important problems of modern chemotherapy, and it is a useful reference work for chemists, pharmacologists, and public health workers.

CHAUNCEY D. LEAKE

Handbook of Industrial Psychology—*By Mary Smith. New York: Philosophical Library*, 1944. 304 pp. Price $5.00.

Dr. May Smith is well known for her researches and publications in connection with the Industrial Health Research Board of the Medical Research Council, Great Britain.

The preface points out that the book is intended to provide an introduction to the subject for those who are in some way responsible for others or have to get on with others. The 10 chapters comprise: Pioneer Work, a succinct review in 20 pages, back-trailing to the time of Galen; Fatigue in Industry; The Environment; Finding the Job for the Person and the Person for the Job; Time and Motion Study; Temperaments, Particularly the Nervous; Why We Work; Measures of Human Well-Being; General Hints on Methods of Investigating; and Conclusions—which briefly summarize the environmental and human causes underlying unrest in industry, stress certain urgent and difficult problems yet demanding attention, and end with two short quotations, one from a philosopher and the other from a business man.

The style is simple and clear and holds the attention of the reader who may or may not have formed some

definite idea about the human problems of work. Much thought has been given to brevity of statement, carefully selected examples of application, and quotations from persons in all levels of employment as well as authorities in industrial psychology.

Good binding, large type, logical arrangement of chapters in headings and subheadings, with references and footnotes at the bottoms of the respective pages, and pertinent cross-referencing assure easy reading. Certain data are given in a few brief tables. There are no illustrations. The Table of Contents is the key to the material—there being no index, which would necessarily be cumbersome were an attempt made to cover the very numerous topics in a summarizing work of this nature. Some doubtfully important criteria fail of mention, as decibels in the discussion on noise, and more on radiation in heating might have been included. Much American as well as Continental material is included with the extensive findings of Britishers. All who have to do with industry will find this a valuable volume.

EMERY R. HAYHURST

Nomenclature of Pathogenic and Parasitic Organisms — *Connecticut State Department of Health,* 1945. 66 pp. Free from publisher.

This manual lists the scientific names of pathogenic bacteria and parasites as used by the Connecticut State Bureau of Laboratories. The subject matter is divided into eight sections: bacteria, rickettsial organisms, fungi, protozoa, trematodes, cestodes, nematodes, and miscellaneous helminths. In each instance the selected name is followed by those synonyms most frequently used and by an adequate and unambiguous description of the organism. The author has followed *Bergey's Manual* with a few exceptions in naming the bacteria, and states that *Dodge's Medical Mycology* has largely been used as authority for the fungi, yeasts and molds. In this latter section are to be found most of the deviations from accepted medical nomenclature, and many of the familiar names are listed only as synonyms, being replaced by more scientifically accurate terms. An excellent index lists both chosen names and synonyms. As Earle K. Borman states in his interesting preface, "Taxonomy may seem dry to many but it is certainly not static."

EDMUND K. KLINE

Nursing and Nursing Education —*By Agnes Gelinas. New York: The Commonwealth Fund,* 1946. 72 pp. Price, $1.00.

This book is a notable addition to the series of monographs on medical problems sponsored by the New York Academy of Medicine and the Changing Order. It depicts in succinct fashion past and emerging trends and problems in nursing and nursing education. Problems of supply and demand, personnel policies and standards of service, adjustments to shifting needs and opportunities, and financing of nursing service and nursing education are briefly but comprehensively discussed, and some recommendations made. This work has particular value in that it shows nursing "whole." The interrelationships of education and service, of community nursing in hospital and home, of professional and sub-professional nursing, of preparation and opportunities for professional service are all clearly shown. This should be thought provoking and informative reading for all nurses, for related professional workers and for the intelligent consumer of nursing care.

RUTH B. FREEMAN

Corky, the Killer—A Story of Syphilis—*By Harry A. Wilmer. New York: American Social Hygiene Association,* 1945. 67 pp. Price, $1.00.

In this book an articulate microbe of the *Treponema pallidum* tribe describes what goes on from the start of a syphilitic infection and what may happen if proper treatment is not given.

Those who have read Dr. Wilmer's story of tuberculosis, *Huber the Tuber* (National Tuberculosis Association, 1942), will know what to expect. Lewis Carrol fans will find delight in the book. The uninitiated may expect information presented in a form that almost makes one feel sorry for the trials and tribulations of the villain.

The significance of Dr. Wilmer's method of health education is semantic. Corky, sitting on a cushion of grey matter and discussing strategy with "General Paresis," takes pathology out of the realm of abstraction. Microbial diseases, after all, are not entities as such but are the result of parasites in search of food.

Quoting Corky's working song:

"Oh, there ain't no match for a mucous patch
If you look all over the world.
The skin may blotch, the liver notch,
The brain may shrivel and curl.

But for beauty pure, with deadly allure,
And with stitches tightly bound,
There ain't no match for a mucous patch
From here to Chancretown."

WILLIAM A. DOPPLER

Eight Years of Public Health Work—Jones County, Mississippi, 1937-44—*By Harry E. Handley and Carolina R. Randolph. New York: Commonwealth Fund*, 1946. 80 pp. Price, $.50.

Health administrators will find an excellent story of the development of a well rounded health program and will find many interesting administrative devices in the pages of this report.

The purpose of the publication is, according to one paragraph, not to prove that lives have been saved, but to describe the organized program and activities that it is hoped will ultimately achieve this objective. This is done admirably. Defects as well as progress are critically discussed.

Each section is accompanied by tables arranged in chronological fashion which contain pertinent statistical information. The tabular presentations are clear and concise. In the Appendix these are set forth in considerably greater detail. Any public health worker who has tried to evaluate his own program will quickly realize that a tremendous amount of constructive thinking has gone into the organization of the work and the recording of basic data which made this presentation possible.

WENDELL R. AMES

Handbook for Nurses — Disaster Preparedness and Relief—*Washington, D. C.: American National Red Cross*, 1945. 62 pp. Free from publisher.

If you have ever waked in the night and wondered what your share as a nurse would be in a local or national disaster, where you would report, what you would be expected to do and what policies regarding Red Cross procedure you would be expected to follow, you need only turn on your light and read the *Handbook for Nurses—Disaster Preparedness and Relief*, just published by the American Red Cross. Better still, read the pamphlet now in the daytime before your night fears materialize in your own locality and the telephone rings calling you to emergency duty.

For public health nurses responsible for a share in advance preparations and the setting up of disaster machinery, the reading of this booklet is practically a "standing order." Every rural nurse should have it on her desk. DOROTHY DEMING

A Textbook of Bacteriology and Immunology—*By Joseph M. Dougherty, Ph.D., and J. Lamberti, M.S. St.*

Louis: Mosby, 1946. 360 pp., 102 illus. Price, $4.50.

As a strong advocate of a broad and general scientific (biology, chemistry, and physics) background for pre-medical and pre-dental training, the reviewer is not in sympathy with this text or its aims. Due to its brevity and conciseness this book would make a better review text for those who had already completed a course in medical bacteriology than those entering the field. This same idea is mentioned in the introduction—" Even the more advanced student would be benefited by its lucid presentation of the fundamentals."

Many important phases of bacteriology, such as the electron microscope, enzymes, pleomorphisms and bacterial variation, biochemical activities and other interrelationships between the bacteria and their environment, are merely mentioned or conspicuous by their absence.

The text is illustrated with many pen-point drawings, many of which are unnecessary (bottles, pipettes, plates, etc.). The drawings of the micro-organisms are too diagrammatic, not clearly labelled and do not present the microörganisms in their true perspective. They fall far short of the clear photomicrographs which copiously adorn the pages of the more modern textbooks of the bacteriology.

Compared with textbooks of general bacteriology such as Frobisher, Salle, Buchanan, and others, this book seems outdated and mediocre. Compared with textbooks of medical bacteriology such as Jordan and Burroughs, Zinsser and Bayne-Jones, Park, and Gay, this book simply does not rate.

WILLIAM W. BROWNE

New Drugs—*By Arthur D. Herrick. New York: Revere Publishing Company,* 1946. 319 pp. Price, $4.00.

With the passage of the Federal Food, Drug and Cosmetic Act relating to new drugs, many questions have arisen in the minds of physicians, drug manufacturers, pharmacists, and all those concerned with safeguarding the consumer. In this book by Arthur D. Herrick, one finds an excellent discussion of the various topics that raise questions concerning the law.

It is extremely well written, clear and concise, and it is a book that should be available for consultation at all times by everyone concerned with new drugs. It is the only book of its kind published and it should receive enthusiastic reception.

CHESTER S. KEEFER

Health and Physical Education in Small Schools—*By Lois Pedersen Broady and Esther French (2nd ed.). Lincoln: University of Nebraska Press,* 1946. 343 pp. Price, $2.50.

This book is a revision of the 1937 edition. The physical education material will be found very useful and practical for small schools. The book deals with physical education organization, class control, supervision, procedures and activities, and an interpretation of community relationships as these are concerned with physical education values. The health education contribution is a very small part of the book which is chiefly concerned with physical education. NINA B. LAMKIN

Principles of Dynamic Psychiatry—*By Jules Masserman, M.D. Philadelphia: Saunders,* 1946. 322 pp. *Price,* $4.00.

In the *Principles of Dynamic Psychiatry,* Dr. Masserman has written an introduction to the *Practice of Dynamic Psychiatry,* a second volume to follow. This first volume defines the scope of modern dynamic psychiatry and presents a critical analysis of the various theories of behavior. The second part of the work is concerned with the

reformulation and integration of these theories into what the author terms a "biodynamic organon of behavior." For the student of medicine, psychology or social work, this book brings together and critically analyzes the basic concepts of various schools of thought regarding human behavior. The author's general biodynamic theory of behavior is based on four general principles. (1) principles of motivation, (2) principles of experiential interpretation and adaptation; (3) principle of deviation and substitution, and (4) principle of conflict. The principles are illustrated with clinical material. There is an excellent bibliography and glossary. While this is an introductory work, it is not a popular presentation, but is what the author describes in the preface, a preparation for the clinical examination and treatment of behavior disorders. JAMES M. CUNNINGHAM

Health Guide Units for Oregon Teachers (Grades 7-12)—*By Howard S. Hoyman. Prepared for Oregon State Department of Education in collaboration with the State Joint Committee for Health and Physical Fitness,* 1946. 429 pp.

Health Instruction—*Tentative Manual — Elementary Schools — Prepared by the Health Subcommittee of the Oregon State Joint Committee for Health and Physical Fitness, State Department of Education, Salem, Oregon,* 1945. 105 pp.

These publications have been prepared in a carefully organized manner to assist teachers of Oregon in adapting their health instruction to meet the requirements of the new state law passed by the Oregon State Legislature in 1945. Both manuals include a series of health guide units which encompass a broad range of suggested objectives, basic content, activities, evaluation methods, and references. Particular emphasis has been given to the opportunities for adaptation of health instruction to school, home, and community needs.

Areas of health instruction outlined include: personal hygiene, nutrition, mental health, first aid, safety education, communicable disease, physiology of exercise, community health and sanitation, structure and functions of the human body, and effects of alcoholic drinks, stimulants, and narcotics.

These publications contain a wealth of health instruction resource material which will be of interest to teachers, school administrators, and other professional workers associated with school health programs.

A. HELEN MARTIKAINEN

Public Health—A Career with a Future—*American Public Health Association,* 1946. 29 pp. Price, $.10.

Addressing ourselves to a college freshman:

We: "How would you like to become a parasitologist, a sanitary engineer, a record analyst, a public health nurse, a health educator, a health officer?"

Answer—He or she: "What do these people do, how does one prepare for such positions, how much salary do they get, are there positions waiting?"

We: "Here are the answers in this new pamphlet of the American Public Health Association."

The attractions of a public health career are here presented pictorially and with a flare in clearly understandable language. College students, and in fact high school students, should find this description of considerable assistance in solving that most perplexing problem of what to do and what extra training is needed for the working years ahead. Physicians, dentists, and engineers outside the field of public health may also gain a very good idea of the opportunities afforded and the nature of the work in this field.

Specific sections are devoted to 18

types of positions, with brief mention of the demands for personnel, the educational qualifications, and the range of salaries to be expected. About the only one left out is the veterinarian. Lists are given of the schools offering graduate training in a number of professional fields, and also a table showing what kinds of positions are open to people with different types of training. Further elucidation of public health practice is provided through a list of appropriate journals and books.

This 29 page pamphlet is a revised form of a previous publication of the Association entitled, "Employment Opportunities in Public Health." The new issue, as well as its predecessor, is a valuable booklet that serves a definite need. It ought to have wide circulation in high schools, vocational schools, colleges, universities, and professional schools.

There is room for many more people in public health. The fact ought to be widely heralded, and a booklet of this type is a most useful tool to this end.

GEORGE T. PALMER

How Heredity Builds Our Lives—*By Robert C. Cook and Barbara S. Burks. Washington, D. C.: American Genetic Association,* 1945. 64 pp. Price, $.75.

The public needs information on eugenic practices. But the study of human genetics has become such a highly specialized science that there have been few attempts to interpret its facts into the simple language of public health education. The authors of this booklet have made an effort to present the facts of human heredity as an "Introduction to Human Genetics and Eugenics." Dr. Burks completed her training in psychology at Stanford University and was Associate in Psychology, Columbia University, until her death in 1943. The manuscript has been completed by Dr. Cook, Managing Editor of the *Journal of Heredity.*

The sections on heredity and environment are similar to, but more up-to-date than the material presented in Jennings' book. The section on eugenics is especially valuable to those who already have some background in this important subject. As a device for public health education, the usefulness of the monograph is limited since it does not help much with the problem of improving eugenic practices. CHARLES E. SHEPARD

Good Food and Nutrition for Young People and Their Families—*By Edna P. Amidon, Dorothy E. Bradbury, and Vivian V. Drenckhahn. New York: Wiley,* 1946. 323 pp. Price, $1.96.

It is the hope of the authors that this book will lead young people and their families to a better understanding of the importance of good nutrition for everyone. In a delightfully humorous way, the essentials of nutrition, their application to real living and the methods by which improvement can be accomplished are given to the student reader.

Real people are shown meeting real problems, and the basic material needed to solve those problems is simply and effectively presented. The laboratory for the student is found in his home, his school, and his community.

The book is topically well organized, and in such fashion that there is a pattern presented to fit the ambitions of every reader. Terminology and captions are in the world of youth. The leader working with young people's groups, as well as the group members, will profit much from using all or part of this text. FREDERICA L. BEINERT

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

City Health Officers Report—Typhoid fever deaths continue to go down. In 1942 there were 31 large cities reporting none within the past two or more years: in 1945 this encouraging record had been achieved by 41. Improvement has been general throughout the country.

ANON. Typhoid in the Large Cities of the United States in 1945. J.A.M.A. 131, 10:817 (July 6), 1946.

Ideals vs. Practicalities — Compared to the Committee-on-Local-Health-Unit's standards, half of the health departments covered in this survey have less than the suggested minimum staff. The average ratio of population to graduate nurses is twice that recommended by the committee.

ALTENDERFER, M. E. Full-time Public Health Positions in Local Health Departments. Pub. Health Rep. 61, 24:866 (June 14), 1946.

Meet a Modern Mr. Malthus—British scientific papers are as long on philosophy as ours are on technologies. This English M.O.H. takes several pages out of Malthus—whom, he observes, many criticise but few read—and by them he comes to the rather gloomy conclusion that modern public health will continue to make life comfortable "during the *few* remaining generations of existence in (western civilization's) *present* form." A few good, old-fashioned "Black Deaths" might be a good thing, he seems to feel, because they tend to wipe out a lot of mental and physical weaklings whom we coddle through life.

BOWES, G. K. Epidemic Disease: Past, Present and Future. J. Roy. San. Inst. 66, 3:174 (July), 1946.

Last Year's Polio Record—In 1945, there were 13,514 cases of polio reported, the third successive year above normal expectancy. Distribution was characterized by a large number of small epidemics spread over all sections of the country.

DAUER, C. C. Incidence of Poliomyelitis in the United States in 1945. Pub. Health Rep. 61, 25:915 (June 21), 1946.

Where the Lion Lies Down with the Lamb—Briefly outlined here are the provisions of the (British) National Health Service Bill. Nearing enactment now, it is to be put into effect presumably, in 1948. Apparently everyone concerned—including the BMA—accepts the principle of the thing. The secretary of that Association is quoted as concluding, "Mr. Bevan's bill, in short, is a good bill." (The Government "White Paper" which describes in detail the provisions of this bill is reprinted in the British Medical Journal No. 4447 of March 30, 1946. With it are 30-odd changes the BMA would like to see made in the bill before it becomes law.)

DAVIS, M. M. John Bull Plumps for Health. Survey Graphic. 35, 7:264 (July), 1946.

Shape of Big Things To Come—One of the charter objectives of the UN is the solution of international health problems. The proposed program for a new world-wide health organization is described.

DOULL, J. A. The World Health Organization of the Future. Canad. Pub. Health J. 37, 6:220 (June), 1946.

Despite Penicillin — ". . . the war taught us precisely nothing fundamental about venereal disease control that we did not know before the war." It is still true that as long as gonorrhea and syphilis remain infectious, venereal

diseases will spread, and the only way to eliminate venereal diseases is to find and treat infected individuals. The author then proceeds to mull over some bizarre plans. We must "grow accustomed to fantastic ideas" he says. You had better start the process for your own mind by reading this paper.

DRAPER, W. F. Wartime Lessons in Venereal Disease Control. J. Social Hyg. 32, 4:185 (Apr.), 1946.

This Is How It Works—One of the two local health councils dubbed "outstanding" in the G-P report is the Public Health Federation of Cincinnati. A coördinating committee of 50 meets once a month to settle the city's current health conflicts. A baker's dozen of specialty sub-councils, each composed of professional and interested lay workers, take over the working relationships in the various disease preventive and health building programs.

GROOM, W. S. The Health Council. Health and Phys. Educa. 17, 6:332 (June), 1946.

You'll Want To See These Pictures—By means of high speed photography it is revealed that common laboratory operations often produce bacterial contamination of the surrounding air. Photographs, reminiscent of the much-publicized M.I.T. sneeze, show what happens when the last drop is blown from a pipette, or when a tight cork is pulled out of a bottle.

JOHANSSON, K. R., and FERRIS, D. H. Photography of Airborne Particles During Bacteriological Plating Operations. J. Infect. Dis. 78, 3:238 (May-June), 1946.

Repeat Chest X-rays—Resurveyed after 18 months, a plant with a stable employee population provided an opportunity to assess the value of follow-up chest x-rays. An appreciable proportion of missed cases was revealed, but so few new infections were uncovered that the procedure is questionable from that standpoint. Routine examination of all new employees is, of course, desirable. It seems that the old employees themselves like the idea of rechecks.

KRAMER, M., *et al.* An Evaluation of a Chest X-ray Resurvey of an Industrial Plant. Pub. Health Rep. 61, 27:990 (July 5), 1946.

Fat Will Get You!—Overweight, transient hypertension, or transient tachycardia lead to cardiovascular diseases. If you have all three, or even two, watch out!

LEVY, R. L., *et al.* Overweight. J.A.M.A. 131, 12:951 (July 20), 1946.

As Others See Us—With commendable British caution this M.O.H. goes thoroughly into the matter of American experience with pertussis vaccine and concludes that what is most needed over-seas is a full-scale field trial there. This evaluation of our exuberant experimentation should be of some significance—though I am not sure what.

LEWIS, J. T. Immunization Against Whooping Cough: A Review. Med. Officer. 76, 1 (July 6), 1946.

"We Are Not a People Who Take Self-Denial Easily"—A psychiatrist takes a rather dim view of the prospects of improving venereal disease control through social hygiene. Men and women with normal sex drives, with little experience in self-denial, with lessening fear of the consequences, under constant stimulation from their surroundings are going to continue to risk infection despite information, repressed prostitution, and improved treatment.

LUEHRS, L. E. Moral and Psychologic Aspects of the Control of Venereal Disease. New York State J. Med. 46, 13:1451 (July 1), 1946.

Prone Pressure or What-Have-You—Some tests on anesthetized subjects convince these British researchers that the choice of method of resuscitation is of less importance than the maintenance of a clear airway. If the subject is dead no method will bring him

back to life. If there is a spark in him, then any method properly carried out will probably suffice.

MACINTOSH, R. R., and MUSKIN, W. W. Pulmonary Exchange during Artificial Respiration. Brit. M. J. No. 4458 (June 15), 1946.

Pertussis Agglutinogen Skin Test—A new skin test is offered, the purpose of which is to determine the immunity status of the infant vaccinated against whooping cough. A negative response indicates the need for a second series.

SAUER, L. W., and MARKLEY, E. D. Whooping Cough. J.A.M.A. 131, 12:967 (July 20), 1946.

Ersatz Protein—When you read imaginative dissertations on the "food yeast" solution of our nation's nutritional problems, take the stories with a grain of salt the size of a boulder. It seems that yeast protein is readily digested by the rat, but the findings of its nutritive values for man are not consistent. "Yeast steak" protein is inferior to beef steak's so apparently we shall be forced to continue to lean on our temperamental stock raisers and meat packers for that essential foodstuff.

VON LOESECKE, H. W. Controversial Aspects: Yeast in Human Nutrition. J. Am. Dietet. A. 22, 6:485 (June), 1946.

The Englishman and His Freedom—Our British brethren debate the virtues of compulsory reporting and treatment of venereal diseases. Apparently most of the discussants felt it to be an unwarranted intrusion upon the Englishman's inviolable freedom—to have venereal disease and to pass it on to whom he wishes. The principal proponent pointed out that the Swedes, who also love liberty, found compulsion acceptable.

WILSON, J. G., *et al.* The Compulsory Notification and Treatment of Venereal Disease. J. Roy. San. Inst. 66, 3:184 (July), 1946.

BOOKS RECEIVED

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

ANNUAL REPORTS—HOW TO PLAN AND WRITE THEM. By Beatrice K. Tolleris. New York: National Publicity Council, 1946. 39 pp. Price, $1.00.

CASUALTY WORK FOR ADVANCED FIRST-AID STUDENTS. By A. W. MacQuarrie, M.D., Ch.B. Edinburgh: E. & S. Livingstone, Ltd. (Imported by The Peter Reilly Co., Philadelphia.) 1944. 231 pp.

CITIES ARE ABNORMAL. Edited by Elmer T. Peterson. Norman, Oklahoma: Univ. of Oklahoma Press, 1946. 263 pp. Price, $3.00.

THE COMMISSION FOR HANDICAPPED CHILDREN—Reports to the People of Illinois, June, 1941–June, 1946. Illinois Commission for Handicapped Children, 1946. 24 pp.

COUNSELING IN THE YWCA. By Tirzah Waite Anderson. New York: Woman's Press, 1946. 39 pp. Price, $.50.

CURRENTS IN BIOCHEMICAL RESEARCH. Edited by David E. Green. New York: Interscience Publishers, Inc., 1946. 486 pp. Price, $5.00.

DIABETIC CARE IN PICTURES. By Helen Rosenthal, B.S., Frances Stern, M.A., and Joseph Rosenthal, M.D. Philadelphia: Lippincott, 1946. 150 pp. 137 illus. Price, $2.00.

EXPERIMENTAL HYPERTENSION. Vol. III. Special Publications of the New York Academy of Sciences. New York: New York Academy of Sciences, 1946. 179 pp. Price, $3.75.

ENZYMES AND THEIR ROLE IN WHEAT TECHNOLOGY. Edited by J. Ansel Anderson. New York: Interscience Publishers, Inc., 1946. 371 pp. Price, $4.50.

FEES AND FEE BILLS: Some Economic Aspects of Medical Practice in Nineteenth Century America. Supplements to the Bulletin of the History of Medicine. No. 6. By George Rosen, M.D., Ph.D. Baltimore: Johns Hopkins Press, 1946. 93 pp. Price, $1.50.

THE GOVERNING BOARD OF THE HOSPITAL (20¢) MEASURING THE COMMUNITY FOR A HOSPITAL (25¢); ORGANIZATION OF THE MEDICAL STAFF OF THE HOSPITAL (20¢).

Chicago: American Hospital Association, 1945.

THE HEALTH OF THE SCHOOL CHILD. By Gertrude E. Cromwell, R.N., M.S. Philadelphia: Saunders, 1946. 256 pp. 46 illus. Price, $2.50.

HOUSING AND CITIZENSHIP. By George Herbert Gray. New York: Reinhold Publishing Corp., 1946. 254 pp. Price, $7.50.

J. F. SUTHERLAND'S FIRST AID. 43rd ed. Revised and rewritten by Halliday Sutherland, M.D. Edinburgh: E. & S. Livingstone, 1941. (Imported by The Peter Reilly Co., Philadelphia.) 77 pp. Price Sixpence net.

JUVENILE DELINQUENCY AND THE SCHOOL. By William C. Kvaraceus. Yonkers-on-Hudson: World Book Company, 1946. 337 pp. Price, $2.28.

MEDICAL CARE FOR THE PEOPLE OF NEW YORK STATE—Report of the New York State Legislative Commission on Medical Care. By Paul A. Lembcke, M.D., M.P.H., Director of Study. Commission on Medical Care, 1946. 504 pp.

MICROANALYSIS OF FOOD AND DRUG PRODUCTS. Prepared by Food and Drug Administration. Washington: U. S. Gov. Ptg. Office, 1944. 171 pp. Price, $.30.

MICROBIOLOGY AND PATHOLOGY FOR NURSES. By Mary Elizabeth Morse, Martin Frobisher, Jr., and Coleman B. Rabin. 2nd ed. Philadelphia: Saunders, 1946. 758 pp. 282 illus. Price, $3.50.

MIRACLES FROM MICROBES. By Samuel Epstein and Beryl Williams. New Brunswick: Rutgers Univ. Press, 1946. 155 pp. Price, $2.00.

MOTOR DISORDERS IN NERVOUS DISEASES. By Ernst Herz, M.D., and Tracy J. Putnam, M.D. New York: King's Crown Press, 1946. 184 pp. Price, $3.00.

THE MUNICIPAL YEAR BOOK—1946. Edited by Clarence E. Ridley and Orin F. Nolting. Chicago: International City Managers' Association, 1946. 593 pp. Price, $8.50.

OUT OF CARNAGE. By Alexander R. Griffin. New York: Howell, Soskin, 1946. 327 pp. Price, $3.00.

PEPTIC ULCER—ITS DIAGNOSIS AND TREATMENT. By I. W. Held, M.D., and A. Allen Goldbloom. Springfield, Ill.: Thomas, 1946. 383 pp. Price, $6.50.

PLANS FOR AN INSTITUTION FOR THE TREATMENT OF EMOTIONALLY DISTURBED CHILDREN. Chicago: The Illinois Children's Home and Aid Society, 1946. 52 pp. Price, $.50.

PREPAYMENT MEDICAL CARE ORGANIZATIONS. 3rd ed. Bureau Memorandum No. 55. By Margaret C. Klem. Washington: U. S. Gov. Ptg. Office, 1945. 148 pp. Price, $.25.

PSYCHIATRY FOR SOCIAL WORKERS. By Lawson G. Lowry, M.D. New York: Columbia University Press, 1946. 336 pp. Price, $3.50.

PSYCHOLOGY—PRINCIPLES AND APPLICATIONS. By T. L. Engle, Ph.D. Yonkers-on-Hudson: World Book Company, 1945. 549 pp. Price, $2.20.

QUESTIONS AND ANSWERS ABOUT YOU. By Tirzah Anderson and Winnifred Wygal. New York: Woman's Press, 1946. 32 pp.

RULES AND REGULATIONS FOR THE CONTROL OF COMMUNICABLE DISEASES. Compiled by Jerome J. Sievers, M.D. Illinois State Department of Health, 1945. 89 pp.

STANDARDS AND RECOMMENDATIONS FOR HOSPITAL CARE OF MATERNITY PATIENTS (Publication No. 314). U. S. Dept. of Labor, Children's Bureau. Washington: U. S. Gov. Ptg. Office, 1946. 22 pp. Price, $.10.

STATISTICS OF MEDICAL SOCIAL CASEWORK IN NEW YORK CITY: 1945. By Ralph G. Hurlin. New York: Russell Sage Foundation, 1946. 31 pp. Price, $.25.

THE STUDENTS POCKET PRESCRIBER. 12th ed. By David Mitchell MacDonald, M.D. Edinburgh: E. & S. Livingstone, Ltd., 1945. (Imported by The Peter Reilly Co., Philadelphia.) 348 pp. Price, $1.25.

SEX PROBLEMS OF THE RETURNED VETERAN. By Howard Kitching, M.D. New York: Emerson Books, Inc., 1946. 124 pp. Price, $1.50.

THE VENEREAL DISEASES—A Manual for Practitioners and Students. By James Marshall. New York: Macmillan, 1946. 348 pp. Price, $4.50.

WHY CHILD LABOR LAWS. By Lucy Manning. U. S. Dept. of Labor, Children's Bureau. Washington: U. S. Gov. Ptg. Office, 1946. 13 pp.

YOUR BALANCE—WORTH KEEPING. By Helen F. Southard. New York: Woman's Press, 1946. 36 pp. Price, $.10.

Jones, M.D. New York: Commission for the Blind, State Department of Social Wel-

THE EYES OF INDUSTRY. By Leonard W. fare. Free in New York State.

THE FEVER BARK TREE. By M. L. Duran-Reynals. New York: Doubleday & Company, Inc., 1946. 274 pp. Price, $2.75.

HOME ECONOMICS. Vocational and Professional Monographs No. 66. By Katherine T. Healey. Boston: Bellman Publishing Co., 1946. 24 pp. Price, $.75.

ASSOCIATION NEWS

SEVENTY-FOURTH ANNUAL MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION
CLEVELAND, OHIO — NOVEMBER 12–14

Meetings of Related Organizations—November 11

RAILROAD FARES FROM VARIOUS POINTS TO CLEVELAND, OHIO

American Public Health Association
November 12–14, 1946

From	One-way for Pullman Travel	Round Trip for Pullman Travel	One-way Lower Berth	One-way Upper Berth
Atlanta, Ga.	$24.20	$42.70	$6.40	$4.85
Baltimore, Md.	14.14	27.10	3.50	2.65
Boston, Mass.	22.50	41.75	4.95	3.75
Buffalo, N. Y.	6.11	12.05	2.95	2.20
Chicago, Ill.	11.66	22.45	2.95	2.20
Dallas, Tex.	39.62	66.30	10.40	7.95
Denver, Colo.	45.83	73.70	11.30	8.60
Duluth, Minn.	26.70	45.05	6.40	4.85
Fort Worth, Tex.	39.62	66.30	10.40	7.95
Indianapolis, Ind.	9.41	18.35	2.95	2.20
Jacksonville, Fla.	35.86	62.55	9.25	7.05
Kansas City, Mo.	26.44	45.20	6.40	4.85
Louisville, Ky.	12.32	22.90	3.60	2.85
Los Angeles, Calif.	84.48	121.80	20.80	15.85
Memphis, Tenn.	24.86	43.80	6.95	5.30
Milwaukee, Wis.	14.47	26.70	3.60	2.85
Minneapolis, Minn.	25.09	42.65	5.80	4.40
Nashville, Tenn.	18.48	33.20	5.25	4.00
New Orleans, La.	36.25	62.80	9.25	7.05
New York, N. Y.	18.81	35.30	4.35	3.30
Omaha, Nebr.	28.09	47.15	6.40	4.85
Philadelphia, Pa.	15.84	30.15	3.50	2.65
Pittsburgh, Pa.	4.35	8.65	2.35	1.80
Portland, Ore.	82.43	121.80	20.80	15.85
Salt Lake City, Utah	60.93	96.40	14.75	11.25
San Francisco, Calif	84.48	121.80	20.80	15.85
Seattle, Wash.	82.43	121.80	20.80	15.85
St. Louis, Mo.	17.60	33.25	4.35	3.30
Washington, D. C.	14.14	27.10	3.50	2.65
Montreal, Que.	20.50	37.95	4.95	3.75
Halifax, N. S.	41.85	72.55	9.70	7.55
Ottawa, Ont.	18.39	34.20	4.95	3.75
Quebec, P. Q.	26.15	48.10	6.20	5.05
Toronto, Ont.	9.89	18.90	2.95	2.20
Vancouver, B. C.	82.43	121.80	21.20	16.10

NOTE: Add 15 per cent Government tax to all fares

RATES QUOTED BY CLEVELAND HOTELS

Seventy-Fourth Annual Meeting, November 12–14, 1946

AMERICAN PUBLIC HEALTH ASSOCIATION

ALL RATES QUOTED ARE FOR ROOMS WITH BATH ON EUROPEAN PLAN

NOTE: Double rooms are easier to secure than single

Hotel	*No. of Rooms*	*Single*	*Double*
Alcazar	300	$3.00	$5.00
Allerton	550	2.50–3.00	3.50– 5.00
Auditorium	300	2.00–3.50	4.00– 7.00
Bolton Square	284	2.50–3.00	3.50– 6.00
Carter	600	3.00–6.00	4.50– 9.00
Cleveland	1,000	3.00–7.00	4.50–12.00
Hollenden	1,000	3.00–5.00	4.50–12.00
New Amsterdam	250	2.00–3.00	3.50– 6.00
Olmsted	250	2.00–3.50	3.50– 7.00
Statler	1,000	3.00–6.00	5.00– 8.00
Wade Park Manor	400	3.50–5.00	5.50– 9.00

.....(Cut off on this line and mail to the hotel of your choice).....

HOTEL RESERVATION BLANK FOR THE CLEVELAND MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION, NOVEMBER 12–14, 1946

To .....
(Name of Hotel)

Please reserve for me ..... rooms for ..... persons for the A.P.H.A. Meeting.

Single room ..... Double room .....

Maximum rate per day for room $..... Minimum rate per day for room $.....

I expect to arrive ..... If date of arrival is changed I will notify you at least 24 hours in advance.

Please acknowledge this reservation.

Name .....

Street Address .....

City..... State.....

Mail directly to the hotel of your choice

NOMINATIONS FOR THE GOVERNING COUNCIL

In accordance with the By-laws of the Association, the Nominating Committee for Governing Council Members consisting of one Fellow elected by each Section and a Chairman appointed by the Executive Board, reports the following nominations for the Governing Council. The By-laws provide that "upon the petition of twenty-five Fellows, the Nominating Committee shall add the name of any Fellow to this list, provided such petition is received fifteen days before the Annual Meeting." The Chairman of the committee is J. J. Bloomfield, Industrial Hygiene Division, U. S. Public Health Service, Bethesda, Md. The other members are: Gregoire F. Amyot, M.D., Health Officers Section; Earnest Boyce, C.E., Engineering Section; John W. Fertig, Ph.D., Vital Statistics Section; Benjamin G. Horning, M.D., Public Health Education Section; Albert C. Hunter, Ph.D.,* Food and Nutrition Section; Mac H. McCrady, Laboratory Section; George A. Nevitt, D.D.S., Dental Health Section; C. O. Sappington, M.D., Industrial Hygiene Section; Marion W. Sheahan, R.N., Public Health Nursing Section; Charles E. Smith, M.D., Epidemiology Section; Susan P. Souther, M.D., Maternal and Child Health Section; Mary M. Wyman, School Health Section.

Ordinarily, ten of the thirty elective members of the Council are elected each year. In the absence of an Annual Meeting in 1945, however, there are twenty vacancies to be filled this year, ten with terms expiring in 1948, and ten with terms expiring in 1949. The twenty Fellows receiving the highest number of votes on a written ballot cast by the Fellows present and voting at the Annual Meeting in Cleveland will be elected to fill these terms.

Gaylord W. Anderson, M.D.
University of Minnesota
Minneapolis, Minn.

Edgar C. Barnes
Westinghouse Electric and Mfg. Company
East Pittsburgh, Pa.

Stanhope Bayne-Jones, M.D.
Yale University
New Haven, Conn.

Albert E. Berry, Ph.D.
Department of Health
Toronto, Ontario, Canada

Maud A. Brown
State Department of Health
Helena, Mont.

George D. W. Cameron, M.D.
Department of Pensions and National Health
Ottawa, Ontario, Canada

A. J. Chesley, M.D.
State Board of Health
St. Paul, Minn.

H. Trendley Dean, D.D.S.
National Institute of Health
Bethesda, Md.

Harold S. Diehl, M.D.
University of Minnesota
Minneapolis, Minn.

Robert Dyar, M.D.
State Department of Public Health
San Francisco, Calif.

I. S. Falk, Ph.D.
Social Security Board
Washington, D. C.

Katherine Faville, R.N.
Wayne University
Detroit, Mich.

Roy F. Feemster, M.D.
State Health Department
Boston, Mass.

Carl R. Fellers, Ph.D.
Massachusetts State College
Amherst, Mass.

Lloyd Florio, M.D.
University of Colorado
Denver, Colo.

* Marietta Eichelberger, Ph.D., acted as alternate for Dr. Hunter, deceased.

Mary D. Forbes, R.N.
U. S. Public Health Service
New Orleans, La.

William G. Frederick, Sc.D.
Department of Health
Detroit, Mich.

A. W. Fuchs
U. S. Public Health Service
Washington, D. C.

Edna A. Gerken
U. S. Office of Indian Affairs
Denver, Colo.

Albert S. Gray, M.D.
State Department of Health
Hartford, Conn.

Jean Gregoire, M.D.
Ministry of Health
Quebec, P.Q., Canada

Adelard Groulx, M.D.
Department of Health
Montreal, Quebec, Canada

Ruth E. Grout, Ph.D.
University of Minnesota
Minneapolis, Minn.

John F. Hackler, M.D.
University of Oklahoma
Oklahoma City, Okla.

George A. Hays, M.D.
Hurley Hospital
Flint, Mich.

Lyman D. Heacock, D.D.S.
National Institute of Health
Bethesda, Md.

A. W. Hedrich, Sc.D.
State Department of Health
Baltimore, Md.

Ira V. Hiscock, Sc.D.
Yale University
New Haven, Conn.

Alice Miller Johnson
U. S. Public Health Service
Washington, D. C.

Marie L. Johnson, R.N.
Metropolitan Life Insurance Company
New York, N. Y.

Robert A. Kehoe, M.D.
University of Cincinnati
Cincinnati, Ohio

Pearl L. Kendrick, Sc.D.
Department of Health Laboratories
Grand Rapids, Mich.

M. R. Kinde, M.D.
W. K. Kellogg Foundation
Battle Creek, Mich.

H. A. Kroeze
State Board of Health
Jackson, Miss.

James P. Leake, M.D.
U. S. Public Health Service
Washington, D. C.

Hugh R. Leavell, M.D.
Rockefeller Foundation
New York, N. Y.

Roland H. Loder, M.D.
State Department of Health
Lincoln, Nebr.

Willard F. Machle, M.D.
610 Park Avenue
New York, N. Y.

Bleecker Marquette
Public Health Federation
Cincinnati, Ohio

John T. Marshall
Dominion Bureau of Statistics
Ottawa, Ontario, Canada

Anna R. Moore, R.N.
State Department of Health
Seattle, Wash.

Lucy S. Morgan, Ph.D.
University of North Carolina
Chapel Hill, N. C.

Carl N. Neupert, M.D.
State Health Department
Madison, Wisc.

C. L. Outland, M.D.
Richmond Public Schools
Richmond, Va.

George T. Palmer, Dr.P.H.
U. S. Public Health Service
Washington, D. C.

Emil E. Palmquist, M.D.
Public Safety Building
Seattle, Wash.

James E. Perkins, M.D.
State Department of Health
Albany, N. Y.

Sol Pincus, C.E.
New York City Health Department
New York, N. Y.

Domingo F. Ramos, M.D.
Calle 28, No. 62 Miramar
Havana, Cuba

Esther L. Richards, M.D.
The Johns Hopkins Hospital
Baltimore, Md.

Henry T. Scott, Ph.D.
University of Wisconsin Alumni Research Foundation
Madison, Wisc.

Raymond Van Buren Stone, D.V.M.
Department of Health
Los Angeles, Calif.

Fred W. Tanner, Ph.D.
University of Illinois
Urbana, Ill.

Felix J. Underwood, M.D.
State Board of Health
Jackson, Miss.

Milton V. Veldee, M.D.
National Institute of Health
Bethesda, Md.

Adolph Weinzirl, M.D.
University of Oregon
Portland, Ore.

A. H. Wieters
State Department of Health
Des Moines, Iowa

Carl A. Wilzbach, M.D.
Department of Health
Cincinnati, Ohio

J. M. Wisan, D.D.S.
State Department of Health
Trenton, N. J.

William P. Yant
Mine Safety Appliance Company
Pittsburgh, Pa.

DR. MILTON TERRIS APPOINTED MEDICAL ASSOCIATE

The Executive Board of the American Public Health Association has announced the appointment of Milton Terris, M.D., M.P.H., as Medical Associate on the staff of the Subcommittee on Medical Care, a subcommittee of the Committee on Administrative Practice. Dr. Terris commenced his duties on September 1, 1946, and will have his offices with those of the Subcommittee on Medical Care in Bethesda, Md.

Dr. Terris is a graduate of Columbia College and the New York University College of Medicine. He received the M.P.H. degree from Johns Hopkins University in 1944 and has served as Assistant District Health Officer with the New York State Department of Health, most recently in the Buffalo office.

The responsibilities of Dr. Terris will be those of technical medical adviser to the Subcommittee on Medical Care on questions relative to the medical care study. One of his first assignments will be participation in a study of the medical care program now being conducted by the State of Maryland. He will be associated with Howard M. Kline, Ph.D., Technical Secretary to the Subcommittee on Medical Care, whose appointment was announced in the April *Journal*.

Milton Terris

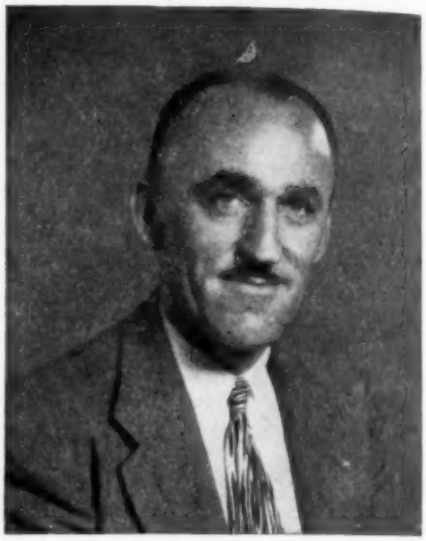
CHARLES B. FRASHER

The Executive Board of the American Public Health Association has announced the appointment of Charles B. Frasher of Philadelphia, Pa., as Field Consultant of the Merit System Unit.

Urgent demands for assistance from states and from local health departments where it is desired to establish merit systems prompted the Executive Board to seek funds for such assistance from the National Foundation for Infantile Paralysis, Inc.

Mr. Frasher will supply field consultation to health authorities on merit system, civil service, and personnel problems. He will also offer liaison service between the Association's Unit and the official and voluntary agencies that can unlock the potential demand from localities, interpret the developments in this specialized area to public health workers and their employees, make contacts to accelerate the evaluation of testing materials, assist in organizing groups of contributors in the field for new examination items and their review, and discover areas of special need where the application of these methods will improve the quality of health services affecting poliomyelitis and other diseases.

Mr. Frasher holds Master's Degrees in Psychology and in Education from the University of Pennsylvania and Springfield College, and is a candidate for the degree of Doctor of Philosophy at the University of Pennsylvania. He has been Dean of Freshmen at Springfield College and Assistant to the Director of Personnel at the University of Pennsylvania. He organized and developed the Merit System Unit for the Pennsylvania Department of Health and later joined the Merit System Staff of the Children's Bureau, Department of Labor, prior to entering the army.



Charles B. Frasher

His army assignments included that of liaison Officer and instructor with the French School of Military Government, and Manpower Officer with the 6th Army Group Headquarters, the 7th Army Headquarters, and the Office of Military Government, Western District.

ACCREDITATION OF VANDERBILT UNIVERSITY SCHOOL OF MEDICINE TO GIVE THE M.P.H. DEGREE

The Executive Board of the American Public Health Association has approved the accreditation of Vanderbilt University School of Medicine to give the degree of Master of Public Health for the academic year 1946–1947 as recommended by the Committee on Professional Education on June 14, 1946. This supplements the list of other institutions accredited for this degree as published (*A.J.P.H.*, Mar., 1946, page 244).

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

Lt. Col. Philip R. Beckjord, M.C., Hqs. Office of Military Government, Baden-Wurttemberg, APO 154, New York, N. Y., Chief, Public Health Branch

Erwin P. Brauner, M.D., Orange County Health Dept., Santa Ana, Calif., Asst. Health Officer and Chief, Division of Tuberculosis Control

Charles C. Chapin, M.D., Longcliff, Logansport, Ind., Supt., Logansport State Hospital

Gerardo Clavero del Campo, Claudio Coello 67, Madrid, Spain, Director, National Institute of Health

Frederick C. Heath, M.D., 10 South Franklin, Christiansburg, Va., Health Officer, Giles-Montgomery-Radford District

David D. Holaday, M.D., 666 Phelan Bldg., 760 Market St., San Francisco, Calif., Asst. Chief, Division of Local Health, State Dept. of Public Health

C. Cameron Kress, M.D., Orange, Va., Health Officer, Orange County Health District

Bernard V. Lally, M.D., Court House, Tiffin, Ohio, Commissioner of Health

Carroll F. Leonard, M.D., M.P.H., 325 East Broadway, East St. Louis, Ill., Director, East Side Health District

Francisco A. Marchan-Carrion, M.D., P. O. Box 52, Quayaquil, Ecuador, S. A. Jefe Provincial de Sanidad, Servicio Sanitario Nacional

Enrique L. Matta, Jr., M.D., P. O. Box 162, Fajardo, Puerto Rico, Chief Medical Officer, Insular Dept. of Public Health

Pauline P. Matusow, M.D., 1235 Grand Concourse, New York, N. Y., Deputy Medical Supt., Harlem Hospital

Russell E. Pleune, M.D., M.P.H., Northern Peninsula Office, Escanaba, Mich., Deputy Commissioner, State Dept. of Health

William J. Porter, M.D., Wayne, W. Va., Wayne County Health Officer

Arthur E. Rikli, M.D., State Health Dept., Helena, Mont., Director, Division of Tuberculosis Control

Claude A. Thomas, M.D., Romney, W. Va., District Health Officer

Laboratory Section

Samuel Belfer, M.A., 746 Jefferson Bldg., Peoria 2, Ill., Director, The Belfer Laboratories

Leona S. Braschi, 44–44th St., Grand Rapids, Mich., Bacteriologist, Evanston Hospital Assn.

Frank D. Eaton, 24 Third Ave., Room 14, New Brunswick, N. J., Technician, Rabbit Serum Production, E. R. Squibb & Sons

John E. Faber, Jr., Ph.D., Univ. of Maryland, College Park, Md., Acting Head, Dept. of Bacteriology

Irving Fox, Ph.D., School of Tropical Medicine, San Juan, Puerto Rico, Asst. Professor of Entomology

F. Perez Gallardo, M.D., Rockefeller Foundation, 66th St. and York Ave., New York 21, N. Y., Official of Health, Public Health Service (Spain)

Salvador L. Momez, M.D., 120 Cavite, Tondo, Manila, Philippines, Asst. Malariologist, U.S.P.H.S.

Amelia Leroux-Planchart, Norte 9 No. 4, Caracas, Venezuela, S. A., Serological Investigation, The Hygiene Institute

Margaret W. Robinson, 2302 33rd Ave., South, Seattle 44, Wash., Junior Bacteriologist, Seattle Dept. of Public Health

Bertha W. Schimpf, Lederle Laboratories, Inc., Pearl River, N. Y., Dept. Head, Testing Division

Bernice M. Scott, 712 Westlake St., Horseheads, N. Y., Laboratory Worker

Elizabeth H. Thiele, M.S., Sharp & Dohme, Glenolden, Pa., Medical Research

Vital Statistics Section

L. E. Aase, B.A., 425 S. Taylor, Pierre, S. D., Asst. Director of Vital Statistics, State Health Dept.

Margaret Barnett, 3935 S St., S.E., Washington, D. C., Social Science Analyst, Division of Vital Statistics, Bureau of the Census

Lela R. Jones, 1801 Ekin Ave., New Albany, Ind., Clerk-Supervisor, Floyd County Health Dept.

Theodore Pritzker, Ph.B., 111 South Grand W., Springfield, Ill., Statistician, State Dept. of Public Health

Engineering Section

William A. Broadway, Jr., 600 W. Warren St., Shelby, N. C., District Sanitarian, Division of Sanitary Engineering, State Board of Health

Donald K. Harmeson, M.S., 2701 DeWitt Ave., Mattoon, Ill., Sanitary Engineer, Division of Sanitary Engineering, State Dept. of Public Health

Paul C. Henderson, M.S., Federal Public Housing Authority, Skinner Bldg., Seattle, Wash., S.A. Sanitary Engineer, U. S. Public Health Service

Lucian M. Hollar, Health Dept., City Hall, Houston, Tex., Supervisor, Rodent & Typhus Control Unit

Henry M. Jones, Harrison County Health Dept., Gulfport, Miss., Public Health Engineer

Fred T. King, P. O. Box 168, Surfside, Calif., Sanitarian, Orange County Health Dept.

John H. Nottage, P. O. Box 128, Nassau, Bahamas, B.W.I., Deputy Sanitary Inspector and Clerical Assistant, Public Health Dept.

William J. Purvis, Woodland Acres, Waldorf, Md., Sanitarian, State Dept. of Health

Paul M. Shadel, 5057 35th St., San Diego 4, Calif., City Food and Market Inspector

Henry C. Steed, Jr., B.S., 825 Custer St., Hapeville, Ga., Sanitarian, Fulton County Health Dept.

Daniel J. Weiner, Hadassah, Jersusalem, Palestine, P.A. Sanitary Engineer, U.S.P.H.S.

Cranston Wilcox, M.S., Branch County Health Dept., Coldwater, Mich., Public Health Engineer

Industrial Hygiene Section

Earl F. Lutz, M.D., 3044 W. Grand Blvd., Detroit 2, Mich., Assoc. Medical Consultant, General Motors Corp.

E. Lucille Wall, R.N., M.S., 26 E. 14th St., Apt. 603, Indianapolis, Ind., Industrial Nursing Consultant, State Board of Health

Food and Nutrition Section

Audrey B. Fuller, B.S., 504 Rock Island Bank & Trust Bldg., Rock Island, Ill., Nutrition Director, Dairy Council of the Quad Cities

Alla P. Meredith, B.S., Alachua County Health Dept., Gainesville, Fla., Nutritionist, U. S. Public Health Service

Victor Arancibia, M.D., Casilla 1289, Santiago, Chile, S. A., Chief of Food Control Office, Direccion General de Sanidad

Horace L. Sipple, Ph.D., 307 N. Michigan Ave., Chicago 1, Ill., Director of Research and Education, Evaporated Milk Assn.

Maternal and Child Health Section

Philip Levine, M.D., Ortho Research Foundation, Raritan, N. J., Director, Biologic Division

Howard E. M. Miller, M.A., 211 W. Wacker Drive, Chicago 6, Ill., Exec. Director, Illinois Commission for Handicapped Children

Public Health Education Section

Lewis W. Andrews, Local Health Admin., R. 4, Topeka, Kans., Community Health Educator, State Board of Health

Charles O. Bishop, 433 S. Broadway, Tyler, Tex., State Representative, National Foundation for Infantile Paralysis, Inc.

Hugh C. Corrigan, 1137 Seventh St., North, Fargo, N. D., City Health Commissioner

Victor A. Davis, A.B., RFD 1, Box 88, Durham, N. C., Student of Public Health Education, Univ. of North Carolina School of Public Health

Jerome Grossman, A.B., 459½ N. Curson Ave., Los Angeles 36, Calif., Student of Public Health Education, Univ. of California, School of Public Health

Harold J. Halligan, M.D., 254 Montgomery St., Jersey City, N. J., Medical Inspector, Dept. of Communicable Disease, City Board of Health

James W. Harris, Jr., 530 E. Main St., 512 Atlantic Life Bldg., Richmond 19, Va., State Representative, National Foundation for Infantile Paralysis, Inc.

Paul H. Kopper, Ph.D., 710 S. Wolcott Ave., Chicago, Ill., Instructor of Bacteriology and Public Health, Chicago Medical School

Arnold L. Larsen, 220-31 Hanlon Ave., Queens Village, N. Y., State Representative, National Foundation for Infantile Paralysis, Inc.

Joyce C. Limpert, 1400 W. Cedar St., Appleton, Wis., Student, Field Training, Illinois Dept. of Health

Kathleen A. McNevin, M.S.P.H., 3681 Saanich Rd., Victoria, B. C., Canada, Consultant in Public Health Education, Provincial Board of Health

Lillian Olson, P. O. Box 408, Yankton, S. D., State Representative, National Foundation for Infantile Paralysis, Inc.

Willard M. Runyon, M.S., 606 E. Main St., Casey, Ill., State Representative, National Foundation for Infantile Paralysis, Inc.

Ruth Williams, 251 Kearny St., San Francisco 8, Calif., State Representative, National Foundation for Infantile Paralysis, Inc.

Dorothy J. Youtz, A.B., 610 South Canal St., Chicago, Ill., Administrative Analyst, Dist. 3, U. S. Public Health Service

Public Health Nursing Section

Mary V. Adams, Duquesne Univ., Pittsburgh, Pa., Acting Director and Assoc. Professor of Public Health Nursing

Sylvia T. Andronik, R.N., 427 Maynard, Ann Arbor, Mich., Student, University of Michigan, School of Public Health

Thelma F. Houwer, R.N., 3963 Coolidge Ave., Oakland, Calif., Supervising Nurse, Oakland Health Dept.

Mary A. Ivanko, B.S., 1404 Harrison Ave., Helena, Mont., S.A. Nurse Officer (R), Asst. Consultant, U. S. Public Health Service

Ardis L. Merrilees, 579 Harris Rd., Apt. 8, Ypsilanti, Mich., Student, School of Public Health, Univ. of Michigan

Lillian G. Ostrand, R.N., 368 Jordan Hall, Ann Arbor, Mich., Student, School of Public Health, Univ. of Michigan

Lillian B. Patterson, R.N., M.A., Rt. Box 24, Auburn, Wash., Director of Field Work, Univ. of Washington

Edith M. Ross, R.N., 579 Harris Rd., Yypsilanti, Mich., Student, School of Public Health, Univ. of Michigan

Janet M. Roth, 606 E. Washington, Ann Arbor, Mich., Student, School of Public Health, Univ. of Michigan

Janice M. Smith, R.N., B.S., Box 701, Hondo, Calif., Supervising Public Health Nurse, Los Angeles County Health Dept.

Martha R. Swindell, Wachovia Bank, c/o I. Swindell, Raleigh, N. C., Student, School of Public Health, Univ. of Michigan

Muriel M. Young, R.N., 1047 Laurel Ave., Kansas City, Kans., Director of Nursing, Kansas City and Wyandotte County Health Dept.

Epidemiology Section

Carlos M. Ramirez-Boettner, M.D., Bogueron (Villa-Blanco), Asuncion, Paraguay, S. A., Director, Infectious Disease Hospital, and Division of Epidemiology, Public Health Ministry

Gladys I. Dornbos, 700 E. Fulton, Grand Rapids, Mich., Bacteriologist, Western Michigan Division, State Dept. of Health

Wilbur G. Downs, M.D., M.P.H., 26 Calle Viena, Mexico, D.F., Mexico, Field Staff Member, International Health Division, Rockefeller Foundation

Raymond Fagan, D.V.M., State Board of Health, 1098 W. Michigan St., Indianapolis 7, Ind., Senior Asst. Scientist, U. S. Public Health Service

Ina Gourley, M.D., 419 30th St., Oakland, Calif., Private Practice

G. Charles Granieri, B.A., 219-A Dolores St., San Francisco, Calif., Investigator of Venereal Diseases, State Dept. of Health

Col. Homan E. Leech, M.C., 2100 N. Madison St., Arlington, Va., Assigned to Office of Surgeon General, U. S. Army

Alex J. Steigman, M.D., 3401 N. Broad St., Philadelphia, Pa., Teaching Fellow in Pediatrics, Temple School of Medicine

School Health Section

Gwendolyn L. Benjamin, M.P.H., 2724 N. 15th St., Philadelphia 32, Pa., Teacher, Health and Physical Education, Public School System

Grace R. Bryant, B.S., 1565 Franklin Ave., Mineola, N. Y., School Health Education Consultant, Nassau County Tuberculosis and Public Health Assn.

George W. Hawks, B.S., 1233 Norfolk St., Willow Run Village, Mich., Student, School of Public Health, Univ. of Michigan

M. Mary Rohn, M.D., C.P.H., Ypsilanti State Hospital, Ypsilanti, Mich., Physician

Bernice M. Woodbeck, 4635 Sutton Rd., Dryden, Mich., Health Educator, Detroit Board of Education

Dental Health Section

Hugh R. McLaren, D.D.S., D.D.P.H., 15 Chatham St., East, Windsor, Ontario, Canada, Dental Health Officer, Windsor Board of Health

Unaffiliated

Charles S. Ascher, LL.B., 838 West End Ave., New York 25, N. Y., Member, Committee on Hygiene of Housing, American Public Health Assn.

Armand L. Bird, 901 North 6th St., Boise, Ida., Supervisor, Information Service, State Dept. of Public Health

George H. Brandt, D.V.M., 5700 Cross Country Blvd., Baltimore 9, Md., Veterinary Consultant, UNRRA

Cleta Brinson, B.A., Edwards Hotel, Jackson, Miss., Secy., Administrative Office, State Board of Health

Mary F. Champlin, M.P.H., Federation of Social Agencies, 519 Smithfield St., Pittsburgh 22, Pa., Secy., Health Division

Robert C. Dobson, M.S., 906 Bell Bldg., Montgomery, Ala., State Representative, National Foundation for Infantile Paralysis, Inc.

John R. Hague, M.D., 5330 Colorado Ave., N.W., Washington 11, D. C., Surgeon (R), Bureau of State Services, U. S. Public Health Service

Harold J. Mayers, Box 416, Belle Glade, Fla.,

Hospital Director and Clinic Coördinator, Migratory Labor Health Assn.

Francis Morgan, 97 Ghuznee St., Stevenson & Howell Ltd., Wellington C., 2, New Zealand, Chemist

Herbert A. Perry, M.D., Eastern State Hospital, Medical Lake, Wash., Superintendent

Jack Seligman, D.V.M., 2866 Brighton 3 St., Brooklyn, N. Y., Veterinarian

Abner D. Silverman, LL.M., 1201 Connecticut Ave., N.W., Washington, D. C., Deputy Asst. Commissioner for Project Management, Federal Public Housing Authority

DECEASED MEMBERS

Theodore D. Beckwith, Ph.D., Los Angeles, Calif., Elected Member 1934, Laboratory Section

Letitia E. Lynch, Merced, Calif., Elected Member 1932, Public Health Nursing Section

Walter H. Oglesby, Clovis, N. M., Elected Member 1945, Laboratory Section

George G. Taylor, M.D., Elkhart, Ill., Elected Member 1943, Health Officers Section

EMPLOYMENT SERVICE

The following pages present information for those seeking qualified public health personnel and for those seeking positions in public health.

This is a service of the Association conducted without expense to the employer or employee.

Address all correspondence to the Employment Service, A.P.H.A., 1790 Broadway, New York 19, N. Y., unless otherwise specified.

Positions Available

(Supplemental to list in August Journal)

Wanted: **Two public health nurses** for county health unit in attractive resort area. Population 61,000 with two urban areas of 15,000 and 8,000. Generalized public health nursing service with staff and 7 field nurses. Salary range $2,100 to $2,600 annually depending upon experience and education. Own car essential with travel allowance of 5¢ per mile up to $600 per year. Apply Director Ottawa Co. Health Dept., Grand Haven, Mich.

Wanted: **Full-time public health nurses.** Applicant should state age, year of graduation, school and any training she has had. Apply Fresno Co. Health Dept., Room 203, Courthouse, Fresno, Calif., for further information.

Wanted: **Medical Director or Associate** for national voluntary health agency. Physician with public health experience sought for agency affiliated with National Health Council. Qualifications include administration, planning, speaking and interpretation, ability to gain greater coöperation from medical schools, hospitals, public health agencies; willingness to travel; 35 to 60 years of age. Salary commensurate with past experience and demonstrated abilities. Send photograph and full outline of medical education, experience, family status, salary requirements, to **Box I**, Employment Service, APHA.

Wanted: **Public health nurse** with special training in health education at a salary of approximately $3,100; also public health nurse for cancer program at salary of $3,300. Must have degree; be able to speak in public; must own car—gasoline and oil furnished. Eastern U. S. Apply **Box T**, A.P.H.A.

Wanted: **Health Officers for Florida:** Younger men preferred. Liberal travel allowances in addition to salary as given below. State has liberal retirement plan. Bay County, Panama City county seat. Fast growing community on St. Andrews Bay and Gulf Coast. Salary $6,000. Charlotte-DeSoto-Sarasota Counties (one unit). Main office, Sarasota. Lower Gulf Coast, tourist, citrus, farming and fishing industries. Salary $6,000. Gadsden-Calhoun-Liberty Counties (one unit). Main office, Quincy. Progressive community, thirty miles from state capital, near Gulf Coast region. Population largely rural. Salary $6,000. Holmes-Okaloosa-Walton Counties (one unit). Main office, DeFuniak Springs. Region borders on Gulf Coast in western part of State. Population largely engaged in farming, fishing, and timber industries. Salary $6,000. Leon County, Tallahassee, state capital, county seat. Governmental center in progressive agricultural area. Salary $6,000. Levy and Citrus Counties (one unit). Main office, Bronson, Gulf coastal region, Central Florida, rural area, farming, fishing, lumber and naval stores leading occupations. Salary $5,700. For application form, and further information, communicate with Merit System Supervisor, 201 Professional Building, Gainesville, Fla.

Wanted: **Public health nurses** for Columbia and Hamilton Counties of Florida. These two health units are along the banks of the Suwannee River and are interesting places to work. Starting salary $160 per month with experience, $170 for those with training, and $180 for trained nurses. Mileage at 7½ cents per mile. Must own car. Write to Health Officer, Northern Florida Health District, Lake City, Fla.

Wanted: **Public Health Physician** for city service. Can receive training on job. Beginning salary $4,080 plus $300 travel. Civil Service protection with retirement provisions. Write Dr. M. D. Ailes, Director of Health, Akron 8, Ohio.

Wanted: **County Public Health Nurses.** Beginning salary $190 month. Travel and expense allowed. Permanent. Write Miss Aileen Dyer, Director, Public Health Nursing Div., Oregon State Board of Health, 1022 S.W. 11th Ave., Portland 5, Ore.

Wanted: Public Health Nurse for generalized public health nursing program in small southern city. Must be trained and qualified to plan work. Starting salary $1,800 or more depending on qualifications, plus reasonable travel allowance. Write Claude H. Ballard, Commissioner of Health, Florence, S. C.

Wanted: Supervisor for Visiting Nurse Association in New Jersey, 40 minutes from New York City. Fourteen staff nurses. Chest agency in National Welfare and Health Retirement Fund. Salary $3,000. Must have adequate experience in field work, supervision and degree in public health nursing. **Box V,** Employment Service, A.P.H.A.

Wanted: Sanitarian for Department of Health in New England residential suburb, 40,000 population. Preference given applicants with specialized public health training or satisfactory experience in sanitation and public health work. Starting salary $2,200–$2,900 per year. **Box W,** Employment Service, A.P.H.A.

Wanted: Public Health Nurse with degree and public health experience for administrative position in newly organized cancer program. Salary $3,100. Furnish own car, gas and oil furnished. Also public health nurse with degree and public health experience for educational program. **Must own car.** Salary $3,100 **Box B,** Employment Service, A.P.H.A.

Wanted: Trained and Experienced Full-time Health Officers for county health departments in California. Salaries range from $5,400 to $7,200. California license required for employment. Address inquiries to Dr. Ellis D. Sox, Div. Local Health Service, State Dept. Public Health, 760 Market St., San Francisco, Calif.

Wanted: Public Health Nurses for staff positions in generalized public health nursing program located in semi-rural Marin County, near San Francisco. Salaries beginning $200 and $235 per month. California R.N., P.H.N. certificates, Health and Development credential required. Apply Dr. Irving D. Johnson, Health Officer, Marin County Health Dept., 704 Fourth St., San Rafael, Calif.

Wanted: Public Health Engineer or Sanitary Engineer with public health engineering experience. Must be graduate in civil engineering with specialty in sanitary and municipal engineering from accredited college. Must have 1 year postgraduate course in public health engineering or 1 or 2 years' practical experience in public health department or U.S.P.H.S. Salary starts $350 month plus travel expense. Write Dr. I. D. Johnson, Health Officer, Marin County Health Dept., 704 Fourth St., San Rafael, Calif.

Wanted: Public health nurses in new county health department in center of Florida's citrus region. Salary dependent upon qualifications and experience. Supervisor of Nurses, $230 to $270 per month. Staff Nurses, $170 to $200 per month, plus liberal travel allowance. Apply, Director, Polk County Health Department, P. O. Box 819, Bartow, Fla.

Alaska Territorial Department of Health wants qualified sanitary engineers in the grades or Director of Division of Sanitation and Engineering and District Sanitary Engineer in Territorial Health Department. Must have bachelor's degree or higher in sanitary or public health engineering from college or university of recognized standing and eligibility for registration as professional engineer in Territory. Director must have 4 years' full-time employment in well organized agency in some phase of sanitary or public health engineering, at least 1 year of which shall have been in administrative capacity; district sanitary engineer must have at least 2 years' full-time employment in well organized agency in some phase of sanitary or public health engineering. Apply Alaska Territorial Dept. of Health, Box 1931, Juneau, Alaska.

Wanted: Health Officer in rural area, population 41,000, staff of 10. Beginning salary $5,000 and travel allowance. Applications should be addressed to Dr. Paul S. Bauer, Alexander-Pulaski Bi-County Board of Health, Halliday Estate Bldg., Cairo, Ill.

Wanted: Public Health Educators with Master's degree from recognized school of public health, preferably experienced in community health councils. Positions available on both state and local levels. Write Dr. Arthur L. Ringle, State Director of Health, 1412 Smith Tower, Seattle 4, Wash.

California State Department of Health announces examinations for Public Health Medical Officers Grades 1 and 2. Grade 1 Qualifications: Graduation from recognized medical school, completion of approved internship, two years' experience in practice of medicine inclusive of military medical experience, laboratory or research work, or teaching. Salary $4,860–$5,820. Appointees eligible for formal public health training. Grade 2 Qualifications: In addition approved internship, three years' public health ex-

perience. Full-time experience in preventive medicine in military service, or one year formal public health training, or two years' postgraduate training in accepted specialty may be substituted for two years' required experience. Salary $5,460–$6,660. Write Director, California State Dept. of Public Health, 760 Market Street, San Francisco, Calif., for application form.

Wanted: Public health nurses for staff and supervising positions. Salaries from $1,800–$2,520 plus travel allowance. Write Division of Public Health Nursing, P. O. Box 210, Jacksonville 1, Fla.

Wanted: Young man with Ph.D. major in bacteriology or physiology needed by food concern in southwestern Pennsylvania. One or two years' experience preferred. Write **Box L,** Employment Service, A.P.H.A.

Wanted: Assistant Health Officer. Salary $5,100. Write Health Officer, Court House, San Bernardino, Calif.

Wanted: Two full-time physicians. Immediate appointment. Conduct several small venereal disease clinics. Weekly rotating schedule. Beginning salary $4,200 plus travel expense. Appointment restricted to graduates United States and Canadian Class A Medical Schools, eligible licensure New Mexico. V.D. experience required. Men under fifty preferred. Write State Health Department, Santa Fe, New Mexico.

The Cleveland Child Health Association, a member of the Welfare Federation of Cleveland supported by the Community Fund, is seeking woman qualified to head well established prenatal instruction program. The following qualifications have been established: candidate must be registered nurse with college degree and special training in obstetrics and public health. Previous teaching experience and knowledge of sewing preferred. A rapidly expanding program offers unusual opportunities. Salary $3,300 per year plus transportation with month's leave each August. Address Mr. Wirth Howell, Acting Director, Cleveland Child Health Association, 1001 Huron Road, Cleveland 15, Ohio.

Hawaii Board of Health wants 1 psychiatrist to direct bureau of mental hygiene. Salary $645 to $728.33 plus $45.00 bonus. Certification by the American Board of Psychiatry and Neurology or sufficient training and experience to be eligible for such certification required; 1 Pathologist to direct Bureau of Laboratories. Salary $645 to $812 plus $45 bonus. Must have 3 years' experience in pathology of which 2 years shall include administrative responsibility for work of recognized laboratory engaged in diagnosis and control of human diseases, graduation from medical school of recognized standing and 2 years' specialized training in pathology; 1 Pediatrician to assist in direction of programs of maternal and child health and of crippled children. Salary $520 to $620 plus $45 bonus. Must be certified by American Board of Pediatrics or have sufficient training and experience to be eligible for such certification. Write to Board of Health, Territory of Hawaii, P. O. Box 3378, Honolulu 1, T. H. Use 15¢ Clipper Mail.

Wanted: Physicians trained in school of public health and with public health experience for key positions in Latin-American Republics. For particulars communicate with Personnel Director, Office of Inter-American Affairs, 499 Pennsylvania Ave., N.W., Washington 25, D. C., sending brief outline of qualifications.

Wanted: Laboratory Technician in Health Department Laboratory. Make routine bacteriological water analyses and bacteriological and chemical analyses of dairy products. College degree. At least one year in bacteriology, inorganic and organic chemistry. No experience required. Salary $150 or more depending on qualifications. Write W. Howard Brown, Director, Food and Laboratory Division, Jacksonville Health Dept., 940 Main St., Jacksonville 2, Fla.

Wanted: Health education worker for active community program sought by Tuberculosis Association in large western city. Attractive position open in agency closely related to official groups. Write **Box H,** Employment Service, A.P.H.A.

Wanted: Staff nurses general, operating room and central supply room, excellent salary and maintenance, $10 additional for evening and night duty. Apply: William A. Wyckoff, Administrator, T. J. Samson Community Hosp., Glasgow, Ky.

Wanted: Qualified public health nurse with tuberculosis experience needed by progressive voluntary agency with active community program. Write **Box C,** Employment Service, A.P.H.A.

Wanted: Public health nurse for staff position. Salary $200–$240, noon dinner allowance. Merit and retirement systems. Program includes generalized field services, interviewing in clinics and group teaching. Minimum requirement certificate of public health nursing. Write Director, Public Health Nursing, Kern County Dept. of Health, P. O. Box 120, Bakersfield, California.

POSITIONS WANTED

Physician, public health and administrative experience, considerable experience as medical examiner, seeks part-time position with city or state health department or industrial concern as preëmployment examiner and health supervisor, New Orleans area. **A-518**

Dentist, 30 years in practice, 13 years in public health work. Several years' executive experience. Now chief of large dental department in southern state hospital. Desires position in southwestern state tuberculosis or mental hospital, or in other public health dental institution. Available after November 30. Write **M-465,** Employment Service, APHA.

Senior Bacteriologist, Ph.D., well known teacher and investigator with industrial experience, seeks position in university, hospital, consulting or manufacturing organization. **L-462**

Bacteriologist - Serologist, thoroughly experienced and capable; teaching, public health and hospital diagnostic routine; excellent references. **L-475**

Pathologist, Board Diplomate, competent and experienced in pathologic anatomy, clinical pathology, bacteriology and tropical medicine; years of public health experience as laboratory director and research associate: consultant, professor and executive; numerous publications, excellent references. Age 40. **L-472**

Bacteriologist and Parasitologist with 4 years' experience as sanitarian and over 3 years' experience in Army medical and sanitary bacteriology, recently 1st Lt., Sanitary Corps, AUS, seeks position in public health laboratory or research in industrial bacteriology. Write **E-490,** Employment Service, A.P.H.A.

R.N., B.S. Wide background of experience in all fields of promotion and health education with official and voluntary agencies. Ability to organize long-range programs and work effectively with staffs and board members. Seeks position in New York City or within commuting distance. Write Box **N-386,** Employment Service, A.P.H.A.

Physician, four years' public health experience, administrative and clinical, experienced industrial medical examiner, seeks position with an industrial concern as preëmployment examiner and health supervisor or a student health appointment in lower California, coastal area preferred. Write **A-520,** Employment Service, A.P.H.A.

Announcement of Examination for Appointment of Executive Director to the Colorado State Division of Public Health

An examination for appointment as Executive Director of the Colorado State Division of Public Health is scheduled to be held in the near future.

Requirements: At least 21 years of age, U. S. citizenship, sound health.

Minimum Qualifications: The degree of doctor of medicine from a reputable medical school and eligibility to examination for medical licensure in the State of Colorado; not less than 1 year of clinical experience gained preferably in a hospital of acceptable standards. Desirable clinical experience should include 3 months' hospital work in pediatrics and a similar period of experience in infectious diseases; not less than 1 year in residence at a recognized university school of public health and the satisfactory completion of a course of study in the fundamental subjects in preventive medicine; three years' full-time successful experience in public health, two years of which shall have been in an administrative or supervisory capacity and two years' experience in private practice of medicine or its equivalent.

Compensation: $6,000 per year. Present appropriation, $4,500 per year.

Applicants should address a letter to the State Civil Service Commission, 314 State Capitol, Denver, Colorado. Completed applications must be mailed on or before September 16th. Applicants will be notified when and where to report for the written examination and performance tests. The examinations will be held in locations determined by the number of applications received. An examination fee of $1.00 must accompany each application and candidates must be prepared to pay their own expenses. Veteran's preference has been established for the rating of the examination.

Advertisement

Opportunities Available

WANTED—(a) Director of health administration, preferably someone qualified to reorganize department; year-round winter resort town of the Southwest; salary dependent upon qualifications but probably $6,500. (b) Chairman of health division; college having enrollment of 2,250 and faculty of more than 250; excellent department splendidly staffed; well equipped infirmary; university medical center; Middle West. (c) Physician to assist medical director and to participate actively in public health clinical program of industrial organization; Florida. (d) Chief of division of medical services; state department of public assistance; will consider one on part-time basis for consulting purposes only; Southeast. (e) Young woman physician for student health appointment; competent medical clinician interested in student health work as career required; duties include responsibilities for preventive and acute medicine as well as for hygiene and public health lecturing. **PH9-1** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—(a) Director of rehabilitation; bachelor's or master's degree in education or public health required; should be well versed in vocational guidance with knowledge of educational psychology and testing; public health training essential; key position with well known association. (b) Industrial hygienist; young man with background in chemical engineering required; large industrial company; Middle West. (c) Health educator to work with a general program; duties principally with school health program; small organization; suburb, eastern metropolis. (d) Health educator for newly created position of coördinator for division of health, metropolitan and county organization; must be qualified to direct community-wide health education program; should be skilled in preparation of education units, community organization; radio script writing, public health journalism, public speaking. (e) Associate bacteriologist, metropolitan department of health; $3,750; East. (f) Young man with degree of Doctor of Public Health and also sanitary engineer; key positions with large industrial company. **PH9-2** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—Dentist with arts college degree and experienced in dental health, particularly training in relation to children's dental problems, for faculty appointment in medical college of university and with state board of health in maternity and child health program; responsibilities would be associated with medical school and with graduate programs carried out for medical profession and also laity. **PH9-3** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

WANTED—(a) Supervisor, visiting nurses' association; staff of fourteen nurses; degree in public health nursing and experience in field work and supervision required; vicinity New York City. (b) Two public health nurses; one of California's most desirable counties for climate, location, and beauty; program offers wide experience including preschool and school health supervision. (c) Two college health nurses; coeducational college; Pennsylvania. (d) District supervisor; staff of 28 nurses; agency conducts visiting nurse service and serves as practise field for university students in degree course; Middle West. (e) Instructor in public health nursing; university school offering graduate course in public health; Middle West. (f) Public health nurses; county health department, northern California; salary starts at $210 with increase to $250; appointments carry retirement, seniority advantages. (g) Three staff nurses; industrial town having large French-Canadian population; generalized program with emphasis on tuberculosis work. **PH9-4** The Medical Bureau, Burneice Larson, Director, Palmolive Building, Chicago 11.

Advertisement

Opportunities Wanted

Malariologist is available; B.S. in Biology; M.S. in Protozoology; Ph.D. in Bacteriology and Parasitology; two years, instructor and professor of biology, small college; while engaged in graduate work served as assistant in department of bacteriology and parasitology; expects early discharge from Army after three years with Sanitary Corps; work has been principally in malaria survey and control; has distinguished himself in field of research; for further information please write Burneice Larson, Director, The Medical Bureau, Palmolive Building, Chicago 11.

Dentist, successful in private practice for twelve years, is available for institutional public health or industrial appointment; for five years served as member of state board of dental examiners; for further information, please write Burneice Larson, Director, The Medical Bureau, Palmolive Building, Chicago 11.

Health Educator; A.B., M.S., Ph.D. degrees; eight years' teaching experience; six years, director department health education, large industrial company; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Public health nurse is available for administrative position; Bachelor of Science in Education with major in Public Health Nursing; past several years, supervisor public health staff, important war project. For further information, please write Burneice Larson, Director, The Medical Bureau, Palmolive Building, Chicago 11.

Well trained public health physician is available for an appointment of administrative character; A.B., M.D., M.P.H. degrees, leading schools; several years, epidemiologist, state department of health; past four years, important administrative appointment with large teaching institution; for further details, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Young sanitarian with Master of Science degree in civil engineering from Middle Western university is available for appointment; four years' teaching experience; currently sanitarian with general public health program; for further details, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

NEWS FROM THE FIELD

MAGNA CARTA FOR HEALTH

On July 22, in New York City sixty delegates signed the World Health Organization Constitution. A Magna Carta for Health, it was called by Dr. Thomas Parran, President of the World Health Conference, which met in New York from June 19 to July 23. The Conference personnel included delegates from 51 United Nations members, 13 non-member states, 3 Allied Control Authorities, and 10 international organizations.

The Constitution will go into effect as soon as it has been ratified by the governments of 26 United Nations members. The signatures in New York of the United Kingdom and Chinese Government were tantamount to ratification. It is expected that both Russia and the United States will ratify the Constitution speedily. The World Health Organization thus appears to be the first of the United Nations specialized agencies to which all members of the "Big Three" would belong. It will be world-wide in character and open to all nations regardless of membership in the United Nations or of their political status. The Conference took the important decision of authorizing the admission of new members on a simple majority vote. Although non-self-governing territories will be

Dr. Thomas Parran, Surgeon General, U. S. Public Health Service, Chairman of the U. S. Delegation and President of the Conference, signing the Charter, while Dr. Martha M. Elliot, Associate Director, Children's Bureau, Department of Labor, and Dr. Frank G. Boudreau, Executive Director, Milbank Memorial Fund, U. S. Delegates, wait their turn to sign
Photograph by Leo Rosenthal, Pix Co.

represented by the governing country, the Conference specifically adopted the principle that their representatives should be qualified persons born in the territories and able to speak for their peoples.

The preamble to the Constitution declares that "The health of all peoples is fundamental to the attainment of peace and security and is dependent upon the fullest coöperation of individuals and states." It further defines health as a "state of complete physical, mental, and social well-being."

As outlined in the Constitution, the World Health Organization will either absorb or direct existing intergovernmental health agencies, for the first time providing nations with a single, authoritative body. It will assume the functions of the League of Nations Health Organization, of L'Office International d'Hygiene Publique, and of the United Nations Relief and Rehabilitation Administration health division. It will integrate as a subordinate branch office the Pan American Sanitary Bureau. These four agencies hitherto have been independent, intergovernmental health bodies.

The World Health Organization will function through an Annual Health Assembly, an Executive Board, and a permanent secretariat headed by a Director General. The recent Conference set up an Interim Health Commission which will function until the World Health Assembly meets. One of its main tasks will be to invoke and prepare for the World Health Assembly as soon as possible. Dr. Fedor Krotkov, Deputy Minister of Public Health of the Union of Socialist Soviet Republics, was elected chairman of the Interim Commission. Upon Dr. Krotkov's return to Russia, Dr. Andrija Stampar, Professor of the University of Zagreb, Yugoslavia, was unanimously elected to succeed him. Dr. G. B. Chisholm, Deputy Minister of Health of Canada, was elected Executive Secretary, having already served as rapporteur for the Technical Preparatory Commission which prepared for the World Health Conference. Vice-Chairmen are Dr. Szeming Sze, technical expert of the Chinese National Health Administration, Dr. Aly T. Shousha Pasha, Under-Secretary of State in the Egyptian Ministry of Public Health, and Dr. Octavio S. Mondragon, Under-Secretary in the Ministry of Public Health and Assistance of Mexico. The other 13 countries represented on the Interim Commission are: Australia, Brazil, France, India, Liberia, the Netherlands, Norway, Peru, the United Kingdom, the United States, the Ukrainian SSR, Venezuela, and Yugoslavia.

To secure its objective, "the attainment by all people of the highest possible level of health," 22 functions of the Organization are outlined in the Constitution. These functions have to do with coördination of international health work, assisting governments in strengthening health services, establishing epidemiological and statistical services, eradication of epidemic, endemic, and other diseases, accident prevention, promotion of maternal and child health, activities in the field of mental health, especially those affecting the harmony of human relations; medical and public health education, international nomenclature of diseases, standardization of diagnostic procedures, international health conventions, food and drug control, and health information services. The wide range of activities is indicated by one article in the list of functions which reads, "To promote the improvement of nutrition, housing, sanitation, recreation, economic, or working conditions and other aspects of environmental hygiene."

In his closing presidential address to the Conference Dr. Parran declared that "The World Health Organization

will be prepared to use all of our most modern scientific knowledge, our best tools, wherever needed to help heal the wounds of war, to eliminate the ancient human plagues, such as malaria and cholera, tuberculosis and syphilis. Prevention of disease is a first objective. But this is only a first step. Malnutrition stunts the bodies and warps the minds of a large part of the world's population. To attain freedom from want of food is another goal to be reached by pooling our nutritional knowledge with the food and agriculture efforts of the United Nations.

"A next step is the positive improvement of health—of physical and mental fitness. Higher levels of physical development, a longer, more productive, more vigorous life span will be sought and attained.

" To help reach these goals we need not only apply all of the knowledge we have now for prevention, treatment and control of disease everywhere in the world, but to conduct intensive research in the laboratory, at the bedside and in the field to push back the frontiers of the unknown in the health sciences.

" These several, measurable, scientific objectives are difficult, yet should be attainable. But the practical scientists here are not content to stop at this point. We believe that in this world of today, history has given us an additional task.

"All of our humane plans for world health go into the discard unless the peoples of the world can learn to live together in peace. Never again can our world indulge the luxury of another total war. Another such war would be suicide for our civilization.

" In our Magna Carta for health we have ventured to declare that we have a contribution to make to the central world problem of our day, which is to help man learn to live together harmoniously with his fellow men. In making this proposition I for one believe that our health science must share the burden with religion and education.

" The science of mental hygiene is one of our newer disciplines, concerned with the human mind and emotions. Even in its present early stage of development, it gives promise of helping man adjust better to his environment, live in greater harmony with his fellows. This science of mental hygiene needs to be developed and applied with all speed, since its objective is basic to preventing war and destroying the seeds of war. In short, its objective is peace.

" The World Health Organization is, therefore, our collective instrument to promote physical and mental vigor, to prevent and control disease, to expand scientific health knowledge, and to contribute to the harmony of human relationships. In short, it is a powerful instrument which we have forged for peace."

The Committee on Administration and Finance of the Interim Health Commission on July 24 adopted provisional budget estimates as prepared by the Executive Secretary, Dr. Chisholm. The budget, not to exceed $300,000 and $1,000,000 respectively for the rest of 1946 and for 1947, was submitted to Secretary General Tryvge Lie of the United Nations in August. The budget will cover expenses of the Interim Commission and its committees, staff salaries, cost of field surveys, and other items. This same committee made plans for opening a Singapore bureau and for establishing without delay an eastern division of the World Health Organization for the collection and dissemination of information on epidemiological questions.

The Interim Health Commission is scheduled to hold a meeting in Geneva, Switzerland, in October and November, 1946.

(For earlier discussions of the World Health Organization see the *Journal*

for April, p. 426; May, p. 576; July, p. 825; and August, p. 949. The Constitution will be carried in a later issue.)

COMMONWEALTH FUND LATIN-AMERICAN FELLOWSHIPS

The Commonwealth Fund has announced that five Latin-American physicians have been appointed to Fellowships tenable in this country during the coming academic year. These men, who have been selected with the help of the Pan American Sanitary Bureau, will be the last group to come to this country under the plan initiated by the Fund in 1942.

The Fellows appointed are Enrique Jose Modesto Escarra, M.D., Argentina; Jose Pimento de Mello, M.D., Brazil; Pablo Mori-Chavez, Peru; Guillermo Terzano, M.D., Argentina; Raul M. E. Carrea, M.D., Argentina.

DR. R. D. DEFRIES RECEIVES C.B.E.

Among the honors awarded in the Canadian Civil List by King George VI as released on Dominion Day in Canada, July 1, was that of Commander of the British Empire to Robert D. Defries, M.D., D.P.H., Director of the School of Hygiene of the University of Toronto. Dr. Defries is Honorary Secretary of the Canadian Public Health Association and a member of the Committee on Professional Education of the American Public Health Association.

COLONEL MACKLER RECEIVES THE CROIX DE GUERRE

The award of the Croix de Guerre with Silver star was recently made to Colonel Max J. Mackler, Sn.C., Tampa, Fla., in the name of General Charles de Gaulle of France. Colonel Mackler has served in England, Ireland, France, Germany, and Switzerland for two years, principally as executive officer of the 16th General Hospital and medical inspector for the 819th Hospital Center, of which he was later commanding officer. Previous to the war he was former director of housing and member of the Department of Public Health at Tampa, Fla. His recognition relates to work with the civilian population of France in reconstrucing water supplies, sewage disposal systems, housing, and the suppression of epidemics.

NATIONAL MENTAL HEALTH BILL

The National Mental Health Act was passed by both houses of Congress and signed by the President in July. The purpose of the Act is to improve the mental health of the people through:

1. Conducting researches, investigations, experiments and demonstrations relating to the cause, diagnosis, and treatment of psychiatric disorders.
2. Assisting and fostering such research activities by both public and private agencies, as well as
   a. to promote the coördination of all such researches and activities, and
   b. to promote the useful application of their results.
3. Training personnel in matters relating to mental health.

It applies to the mental health problem the same general pattern of federal-state coöperation that characterizes the Social Security Act for general public health work and that for venereal disease control and tuberculosis control.

The Act authorizes an appropriation of $7,500,000 for the erection and equipment of hospital and laboratory buildings and facilities to be known as the National Institute of Mental Health. This is to be used by the Public Health Service as the focal point for research, experimentation, and advanced or specialized training, and as a clearing house for the collection and dissemination of information concerning advances in the prevention, diagnosis, and treatment of psychiatric disorders. It is contemplated that physically the Institute will consist of clinical facilities to accommodate about 200 patients needed for clinical research, as well as special

laboratories for basic laboratory studies. For purposes of study, the bill authorizes the Surgeon General to admit and treat at the new Institute voluntary patients, whether or not they are otherwise eligible for treatment by the Service. It also authorizes the transfer to the new Institute, for purposes of study, of patients from St. Elizabeths Hospital, a federal mental hospital.

Further provided by the Act is an additional appropriation of $10,000,000 a year to the U. S. Public Health Service for grants for the establishment and maintenance of public health services to take care of the proposed expansion of mental health work. The same provision increases by $1,000,000 the amount that the service may expend in providing demonstrations and personnel to assist the states and for the training of personnel for state and local health units.

A National Advisory Mental Health Council is created to give advice and assistance to the Surgeon General who is responsible for the administration of the program on the federal level. The Council is composed of the Surgeon General ex-officio and six members selected by him from leading medical or scientific authorities who are outstanding in the study, diagnosis, or treatment of psychiatric disorders. The Advisory Council also reviews, approves, and certifies to the Surgeon General applications for research grants to universities, hospitals, laboratories, and other public and private institutions, and training grants to public and private schools and institutions. It also is empowered to fix the number of fellowships granted for research at the National Institute and elsewhere for advanced or specialized training in the field of mental health.

The Act defines psychiatric disorders as including "diseases of the nervous system which affect mental health." Mental health in turn is defined as a condition of health free from psychiatric disorders.

In commenting on the enactment of the bill Dr. George S. Stevenson, Medical Director of the National Committee for Mental Hygiene, said, "This epochal new law makes possible for the first time a national attack on mental illness. We have long known that vastly greater effort and more personnel and funds are necessary to provide better care for patients in mental institutions and, even more important, to prevent early mental and nervous disorders from developing into serious conditions requiring protracted institutional treatment.

"There are 600,000 patients in mental hospitals, at least 1,000,000 more sick enough to require hospital treatment and there are an additional 8,000,000 people who should be receiving psychiatric guidance and treatment.

"For the first time states will be able to establish clinics open to all who need services. The task before each state now is to formulate the widest possible program for the development of its mental hygiene services, with federal assistance. Our universities, hospitals, clinics and research laboratories have before them unprecedented opportunities to throw further light on the cause, treatment, and prevention of mental illness.

"For every dollar spent to advance knowledge of the cause, diagnosis and cure of mental diseases, the American people have heretofore spent $100 to care for the known mentally ill. The new law should signalize the beginning of the end of such a lopsided and expensive handling of the mental health problem."

INSTITUTE FOR COÖPERATIVE RESEARCH

Johns Hopkins University, Baltimore, has established an Institute for Cooperative Research to work with government and industry, according to the

New York Times, June 19. In a statement to the press, Isaiah Bowman, LL.D., president of the university, said that so many scientific investigations had been made at the university during the war on a contract basis for various government agencies in the interest of national health, welfare, and safety, that the university had now decided to recognize such research as a regular function. The science departments in the school of higher studies will participate in the activities of the new institute together with the applied physics laboratory at Silver Spring. In addition the School of Medicine, the School of Hygiene and Public Health, and the School of Engineering will coöperate.

FEDERAL SECURITY AGENCY REORGANIZATION COMPLETED

The July *Journal* (p. 827) summarized briefly the President's reorganization plan for the Federal Security Agency. This has now gone into effect in the absence of disapproval by the two houses of Congress, and its significance and practical effects have been summarized by Federal Security Administrator Watson B. Miller.

Public health will be one of four coordinate operating branches of the Security Agency, the other three being Social Security Administration, Education, and the Office of Special Services.

The Public Health Division will consist of the U. S. Public Health Service, with Dr. Thomas Parran continuing in his capacity as Surgeon General of the Service. Freedmen's and St. Elizabeths Hospitals will be under his direction. Transferred to the Service from the Commerce Department is the Division of Vital Statistics, with Dr. Halbert Dunn remaining as head of the Division. The Food and Drug Administration is in the Office of Special Services.

The Children's Bureau (with the exception of its child labor functions) is transferred to the Social Security Administration Division. Katherine Lenroot, its Chief since 1934, will remain in that capacity. Commenting on this transfer, Administrator Miller said, "For administrative purposes, the Children's Bureau, with its programs for maternal and child health, child welfare, and crippled children's services, has been placed in the Social Security Administration. But its relationships with both health and education are fully recognized, and effective coördination in this field will be one of our major objectives."

In addition to the 4 operating divisions of the Federal Security Agency there will be 6 staff offices: Executive Assistant, General Counsel, Research, Information, Federal-State Relations, and Inter-Agency and International Relations. The Federal-State Relations Office will look toward the coördination of grant-in-aid administration and the establishment of uniform standards and procedures. It is the hope that state agencies administering several grant programs may submit a single state plan and be subject to unified fiscal, personnel, and other policies.

No action has yet been taken by Congress on the President's recommendation included in his reorganization plan that the Federal Security Agency be given "departmental status and a permanent place in the President's Cabinet."

AMA'S DISTINGUISHED SERVICE MEDAL TO DR. CARLSON

Dr. Anton Julius Carlson, Distinguished Service Professor Emeritus of the University of Chicago, received the citation and Distinguished Service Medal of the American Medical Association at its recent meeting in San Francisco. Currently Dr. Carlson is chairman of the Executive Committee of the American Association for the Advancement of Science, of which he is also a past president, and chairman of

the National Society for Medical Research (see p. 1061). He has also been president of the American Physiological Society, the Society for Experimental Biology and Medicine, and the American Biological Society. He is the author of *Health in Hunger and Disease* and *The Machinery of the Body*, in addition to many periodical contributions.

HOSPITAL CONSTRUCTION BILL BECOMES LAW

The President has signed S. 191, more familiarly known as the Hospital Construction Bill, passed by both houses of Congress. As already discussed in the *Journal* (pp. 372, 380, 987, 1945; and 669, 1946), this bill amends the Public Health Service Act to authorize grants to the states for surveying their existing hospital and health center facilities and to assist in the construction or modernization of needed facilities.

The bill projects a $1,125,000,000 five year hospital construction program and authorizes the federal government to pay up to one-third of the cost of building or equipping new facilities. The remaining two-thirds must be contributed locally. Voluntary non-profit hospitals may share in the program as well as public—state, county, or city—institutions. The bill carries an appropriation of $375,000,000 for construction and an additional $5,000,000 for surveys, drafting of plans, and allocating of priorities.

The bill sets a new pattern for the distribution of federal funds. Heretofore most state-federal coöperative programs have required dollar for dollar matching. In the hospital construction program, states will share on a basis of need. The ratio per capita income of the state to the national average per capita income, value of products, and population are among the factors that will determine need.

In testifying before the Senate Sub-Committee on Education and Labor in behalf of the bill, Surgeon General Thomas Parran of the U. S. Public Health Service outlined the projected program. This consists of an integrated system of hospitals and health centers that would serve every section of the nation. The system would be made up of base hospitals and their tributary district and rural hospitals and health centers. Under the plan it will not be necessary for all areas to have the expensive facilities of the base hospital because provision will be made for referral to the base hospital of cases or problems needing these services.

Since the bill was under discussion in two successive sessions of Congress, the states have had an opportunity to prepare for the operation of the Act. A majority of the states have already passed appropriate legislation authorizing a hospital survey and designating the state agency through which the federal grants-in-aid will be administered. Surveys of hospital and health center facilities are under way in nearly every state.

NEW YORK STATE HEALTH OFFICERS ASSOCIATION

The New York State Health Officers Association at its business meeting, June 26, elected the following officers for the coming year:

President—George E. Sanders, M.D., Rochester
First Vice-President—Burdge P. MacLean, M.D., Huntington
Second Vice-President—Robert H. Broad, M.D., Utica
Third Vice-President—Charles D. Shields, M.D., Buffalo
Secretary—Eldred Stevens, M.D., Hammondsport
Treasurer—H. Burton Doust, M.D., Syracuse

Dr. R. H. Wilcox, having served as Association Secretary for the past ten years, declined nomination for another term. Dr. Doust was reëlected to the office of Treasurer.

DR. GAYLORD W. ANDERSON NAMED TO MAYO CHAIR

Dr. Gaylord W. Anderson, on June 24, was designated by the University of Minnesota regents as first holder of the Mayo Professorship of Public Health, first permanently-endowed professorship at the University. Selection of Dr. Anderson topped a list of 9 major appointments and promotions approved by the regents.

Professor and Head of the School of Preventive Medicine and Public Health at the university, Dr. Anderson has been on the staff since 1937. He was on leave for 3½ years, from July, 1942, to March of this year, serving in the office of the Army's Surgeon General in Washington. He was graduated from Dartmouth in 1922, received his M.D. and Dr.P.H. degrees at Harvard and studied in Europe.

The Mayo chair was endowed last January by the Mayo Properties Association.

RIO DE JANEIRO AND ENVIRONMENTAL HEALTH

Well over 200 sanitary and public works engineers, engineering educators, health officers, manufacturers, and other interested persons met at Rio de Janeiro from June 10–14, 1946, at the First Inter-American Regional Conference of Sanitary Engineering. The purpose of the Conference was to discuss sanitation problems of the Americas and to make the first move in establishing a permanent international organization of sanitary engineering in this hemisphere. The Institute of Inter-American Affairs and the Pan American Sanitary Bureau, in collaboration with the National Health Department of Brazil, were the sponsors. The Water and Sewage Works Manufacturers Association provided financial aid, speakers, and exhibits. The following objectives for the permanent association were agreed upon by the Organization Committee:

1. Development of sanitary engineering
2. An interchange of ideas and scientific information concerning developments of sanitary engineering in the Americas
3. Establishment of standards of sanitation for the Americas
4. Promotion of more rapid advancement in the sanitation of the several countries of America as a necessary basis for economic development
5. Establishment of good will and better understanding between the engineers of the Americas

Among the recommendations of the Sanitary Engineering Education Committee were:

1. Inclusion of sanitary engineering courses covering water supply and sewage disposal in the civil engineering curricula of all engineering schools in the American nations
2. The creation of a school of public health in each nation with additional schools on the basis of one for each twenty million population
3. That all applicants for governmental positions concerned with public health be required to present a certificate of graduation from a special course in hygiene and public health

A special regional conference to include nations of northern South America and Central America will be held at Caracas in September. Present plans are to follow this by a conference of representatives from all 21 member nations early next year.

PERSONALS

Central States

ALBERT E. BAIR, M.D., of Independence, Kan., has been appointed Health Director of the Montgomery County Health Department, effective April 1, succeeding HAROLD O. BULLOCK, M.D., who in the last 8 months has served as a temporary part-time Health Officer.

CHARLES H. BENNING, M.D., M.P.H.,* has accepted the position of Director of Public Health at Oak Ridge, Tenn., as of July 22. Dr. Benning was recently Chief Medical Officer

with the Veterans Administration, Flint, Mich. Prior to that, he was with the U. S. Public Health Service, from 1941 to 1945.

GEORGE F. CAMPANA, M.D., M.P.H.,* who has been State Health Officer in Bismarck, N. D., since 1944, resigned on July 20 to return to his home in Brooklyn, N. Y. WILLIAM M. SMITH, M.D., M.P.H.,* who has been Director of the Division of Communicable Diseases, was appointed Acting Health Officer.

ICIE MACY HOOBLER, PH.D.,* Director of the Research Laboratory of the Children's Fund of Michigan in Detroit, has been awarded the Francis P. Garvan Medal of the American Chemical Society for her studies on nutrition and the chemical processes of human growth.

C. F. LEONARD, M.D., M.P.H., has been appointed Public Health Officer of the East Side Health District in East St. Louis, Ill., by action of the Board of Health. His term of office began July 1.

CHANGES IN HEALTH PERSONNEL IN MICHIGAN:

LARS W. SWITZER, M.D.,† for 2 years plant physician for General Motors Corporation, Bay City, has been named Head of the Manistee-Benzie Health Unit, with headquarters in Manistee, a position he once before held.

CLARENCE D. BARRETT, M.D.,* of Mason, on service with the Army of the United States, has been appointed Health Officer of Ottawa County.

CHARLES F. ATKINSON, M.D.,† of Traverse City, has resigned as Director of the Grand Traverse-Leelanau County Health Department because of ill health.

JAYNE SHOVER,† Acting Director of Field Services for the National Society for Crippled Children and Adults, has been appointed Director of the new Cerebral Palsy Division of the National Society, with headquarters in Chicago. Before joining the Society in 1945, Miss Shover was Supervising Psychologist and Special Education Director of the Illinois Division of Service for Crippled Children and Consultant to the Illinois Commission for Handicapped Children.

PAUL R. SLATER, M.D., of Burlington, Ia., on May 1 became Director of the Serum-Plasma Center and Associate Director of the Division of Preventable Diseases of the Iowa State Department of Health. Dr. Slater, who has recently been separated from service with the rank of Lieutenant Colonel, in 1941 served as Medical Director of the Interstate Malarial Survey for Illinois, Minnesota, Wisconsin, Missouri, and Iowa.

Eastern States

NUNZIO J. CARROZZO, M.D., of Staten Island, N. Y., has been assigned from the U. S. Public Health Service as Acting Medical Director for the Iowa State Division of Industrial Hygiene.

ANNA FILLMORE, M.P.H.,* a member of the staff of the Visiting Nurse Service of New York since 1940, has been appointed Assistant Director of the organization, succeeding MISS ELIZABETH C. PHILLIPS,* who has resigned to become Director of the Program of study in Public Health Nursing at New York University.

FRANZ GOLDMANN, M.D.,† has been appointed Clinical Professor of Public Health at the Yale School of Medicine, New Haven, Conn., it was announced on July 18.

MABEL DUNCAN KIRKPATRICK has been appointed Assistant Director of Psychiatric Social Work for the New York State Department of Mental Hygiene. She has been

Supervisor of Social Work at the Rome State School since 1944. From 1930 to 1944, Mrs. Kirkpatrick was a member of the social service staff of the Utica State Hospital.

PAUL A. LEMBCKE, M.D., M.P.H.,† is now Associate Director of the Rochester, N. Y., Council of Regional Hospitals, which is operating under a grant from the Commonwealth Fund, New York City.

CHANGES IN NEW YORK STATE HEALTH DEPARTMENT PERSONNEL:

EDWARD B. BUKOWSKI, M.D.,† formerly Chief of the Emergency Maternity and Infant Care Bureau and more recently District Health Officer in the Rochester District, resigned from the department to accept the position of Deputy Health Commissioner in the Department of Health in the City of Buffalo.

JOSEPH P. GAREN, M.D.,* District State Health Officer in the Saranac Lake District for the past 9 years, has been assigned to a similar position in the Rochester District.

JOHN M. CHAPMAN, M.D.,† Assistant District Health Officer in the Buffalo District, has been transferred to the Saranac Lake District as District State Health Officer to succeed Dr. Garen.

MARY BUTLER KIRKBRIDE, Sc.D.,* retired on June 30 as Associate Director of the Division of Laboratories and Research, after 32 years of service in the department.

JAMES H. LADE, M.D.,* Assistant Director of the Division of Syphilis Control, has been granted a military leave of absence to accept the position of Senior Surgeon with the U. S. Public Health Service to aid in the UNRRA program in Poland.

ROBERT L. VOUGHT, M.D.,† District Health Officer in the Rochester District, resigned his position with the department to accept a position in Ecuador with the Institute of Inter-American Affairs.

DWIGHT O'HARA, M.D.,† Boston, has been appointed Dean of Tufts College Medical School. He has served since 1931 at Tufts as Professor of Preventive Medicine.

MRS. BEL M. OXHOLM has been appointed Commander of the Field Army of the New York City Cancer Committee, succeeding MRS. FRANCIS J. RIGNEY who resigned on April 5 and who had served as Commander since 1939. Mrs. Oxholm is a graduate of the Glasgow Western Infirmary, a member of the College of Nursing, and served with Queen Alexandra's Imperial Military Nursing Service from 1914 to 1919. She has been Chief of the Obstetrical Department of the Nursing School of Emory University, Georgia, and also served at the Gouverneur Hospital in New York City.

JOHN T. SHEA, M.D., of Foxboro, Mass., Secretary-Treasurer of the Massachusetts Psychiatric Society, has been appointed Director of Mental Deficiency and Statistics in the Massachusetts State Department of Mental Health.

BARRY C. SMITH,† General Director of the Commonwealth Fund, New York City, has recently been conferred the degree of Doctor of Laws (honoris causa) by the University of Glasgow, recognizing "the sustained generosity of academic America to academic Britain."

MYRON E. WEGMAN, M.D.,* has resigned as Assistant Professor of Clinical Pediatrics at Cornell University Medical College and as Director of Training and Research with the Bureau of Child Hygiene, New York

* Fellow, A.P.H.A.
† Member, A.P.H.A.

City Department of Health. He has been appointed Professor of Pediarics and Head of the Department in the Louisiana State University School of Medicine, New Orleans.

Southern States

J. B. BLACK, M.D., DR.P.H.,* who has served for 19 years as Health Officer of Rutherford County, Tenn., has resigned to enter private practice in Murfreesboro.

JOHN A. COWAN, M.D.,* recently released from the U. S. Public Health Service, for which he had been serving as Director of the Venereal Disease Control Division and Acting Director of the Division of Local Health Service, Oklahoma State Department of Health, has been appointed Director of the Bureau of Venereal Disease Control of the Michigan State Department of Health, Lansing, effective June 1.

LEON A. DICKERSON, M.D., of Oak Hill, West Va., has been appointed Director of the Boone County Health Department, effective April 1, succeeding ROBERT L. HUNTER, M.D., of Madison, who has resigned.

CHANGES IN HEALTH PERSONNEL IN FLORIDA:

WILLIAM G. C. HILL, M.D., formerly with the West Virginia State Health Department, has been appointed Director of the Health Unit composed of Suwannee-Dixie and Lafayette Counties with headquarters at Live Oak. This is a new unit and began operation on July 1, 1946.

FRANKLIN H. REEDER, M.D., M. P.H., recently released from the U. S. Army Medical Corps, has been appointed Director of the Southwestern Florida Health District, composed of Manatee, Hardee, DeSoto, Charlotte, Sarasota, Lee, Hendry and Collier Counties, with headquarters at Arcadia, Fla.

ALBERT V. HARDY, M.D.,† who has been serving with the Office of Scientific Research and Development and the National Institute of Health, Washington, D. C., has been appointed Director of the Bureau of Laboratories of the Florida State Board of Health. He once served as Epidemiologist with the Iowa State Department of Health, as Associate Professor of Preventive Medicine at the State University of Iowa College of Medicine, Iowa City, and as Associate Professor of Epidemiology, Columbia University College of Physicians and Surgeons, New York.

LT. COL. EDWARD S. HOPKINS, SN.C.,† has been awarded the Army Commendation Ribbon "for outstanding and meritorious service as Sanitary Engineer, Headquarters Third Service Command from January, 1944, to December, 1945." He has returned to his former position as Filtration Engineer, Bureau of Water Supply, Baltimore, Md.

CHANGES IN HEALTH PERSONNEL IN KENTUCKY:

BENJAMIN F. REYNOLDS, M.D., of Carlisle, has been appointed Health Officer of Nicholas County.

HARLAND V. USHER, M.D., of Sedalia, has been named Health Officer of Graves County, succeeding GEORGE M. JEWELL, M.D.,† who has entered private practice in Kokomo, Ind.

RUSSELL E. TEAGUE, M.D., of Louisville, has resigned as Director of Tuberculosis Control for the Kentucky State Department of Health to carry on similar activities for the U. S. Public Health Service.

FREDERICK D. MOTT, M.D.,* has resigned as Chief Medical Officer of the Farm Security Administration after serving in the program since Janu-

ary, 1937. He has been appointed Chairman of the Health Services Planning Commission of the Province of Saskatchewan, Canada, for 3 years. MARK V. ZIEGLER, M.D.,† will succeed him at the F.S.A.

RICHARD J. PLUNKETT, M.D.,† has been appointed Director of the Division of Health and Sanitation, Institute of Inter-American Affairs, to succeed COL. JOHN D. YEAGLEY, who resigned, effective April 4. Dr. Plunkett has been a member of the Institute staff since it was created in 1942, serving as Chief of Field Party in Paraguay, where he organized and directed the Inter-American Coöperative Public Health Program. Dr. Yeagley plans to join the staff of Bowman Gray School of Medicine of Wake Forest College, Winston-Salem.

BRUCE H. POLLOCK, M.D.,* resigned on July 19 as Deputy State Health Commissioner, West Virginia, to become Chief of the Outpatient Department of the U. S. Veterans Administration in Huntington, W. Va.

CHANGES IN HEALTH PERSONNEL IN TEXAS:

EARL H. SMITH, M.D., Texarkana, has resigned as Director of the Texarkana-Bowie County Health Unit to go to Tarzana, Calif.

DUAN E. PACKARD, M.D., of Kerrville, has been appointed Health Officer of Kerr County to succeed the late JOHN D. JACKSON, M.D.

DAVID L. ROBERTSON, M.D., Wichita Falls, has been named Director of the Wichita Falls Health Unit and will take up his new duties immediately on discharge from service.

JOHN G. DANIELS, JR., M.D., of Gilmer, is the new full-time Director of the Upshur County Health Unit.

WALDO L. TREUTING, M.D., M.P.H.,† has been appointed President of the Louisiana State Board of Health and State Health Officer by the Governor, effective July 23. He succeeds DAVID E. BROWN, M.D.,† who has been the State Health Officer since 1942. Dr. Treuting has been Chief of the Division of Preventive Medicine for the past 3 years and has also served as Parish Health Officer of several of the Louisiana Parishes and as Epidemiologist of the State Health Department.

CHANGES IN HEALTH PERSONNEL IN VIRGINIA:

VERNON A. TURNER, M.D.,† formerly Health Officer of Augusta County and recently released from army service, has been appointed Assistant Director of Local Health Services, with headquarters in the Southwest District Office in Abingdon, effective May 1, succeeding PEYTON M. CHICHESTER, M.D., of Richmond, who has been transferred to the central office in Richmond.

CAMERON F. MACRAE, JR., M.D.,† recently released from army service, has been named Health Officer of the Russell-Wise Health District to succeed LINWOOD FARLEY, M.D.,† of Morton, who has been transferred to the Prince William-Stafford Health District with headquarters at Manassas, effective May 1.

Western States

WILLIAM F. COGSWELL, M.D.,* of Helena, Mont., for 33 years Executive Secretary of the Montana State Board of Health, has become an honorary life member of the U. S. Public Health Service. The honor was conferred at a recent banquet in Washington, D. C. Since his resig-

* Fellow, A.P.H.A.
† Member, A.P.H.A.

nation from the State Board, he has been preparing a history of Rocky Mountain spotted fever.

WILLIAM F. HAMILTON, M.D., of Havre, Mont., has been appointed Health Officer of Hill County.

Foreign

ERNESTO DE SOUZA CAMPOS, M.D., formerly Professor of Bacteriology, São Paulo School of Medicine, Brazil, has been appointed Minister of Education and Health of Brazil. The new minister informed EUGENE P. CAMPBELL, M.D.,* Chief of the Institute of Inter-American Affairs field party in Brazil, that no changes are planned in regard to the administration of Servicio Especial de Saude Publica, the coöperative public health program in Brazil, now almost 4 years old.

Deaths

CHARLES LEE HOAGLAND, M.D., the youngest of the 15 full members of the Rockefeller Institute, died of a heart ailment on August 2 at the age of 39. He was a leader in studying progressive muscular dystrophy and developed a clinic at the Rockefeller Institute Hospital on cirrhosis of the liver. Most of the present methods of treating cirrhosis and infectious jaundice are based on his findings.

EDWARD GODFREY HUBER, M.D., DR.P.H.,* Professor of Public Health Practice and Associate Dean of the Harvard School of Public Health, died suddenly on July 22 at the age of 64. He had been Acting Dean of the School since 1942, during which time he aided in securing funds from the Rockefeller Foundation to insure further development of the school, created the Harvard Public Health Alumni Bulletin and introduced instruction and research in the newer branches of public health.

MORRIS C. SCHWARTZ, PH.D., Assistant Director of the Engineering Experiment Station, Louisiana State University, Baton Rouge, La., died on May 26. Dr. Schwartz has served as a member of the Joint Editorial Committee of American Water Works Association and the A.P.H.A. for *Standard Methods for the Examination of Water and Sewage.*

CONFERENCES AND DATES

American Dietetic Association—28th Annual Meeting. Netherlands Plaza, Cincinnati, O. October 14–18.

American Hospital Association—48th Annual Convention and Post-war Conference. Philadelphia, Pa. Week of September 30.

American Medical Association—7th Annual Congress on Industrial Health. Copley-Plaza Hotel, Boston, Mass. September 30-October 3.

American Nurses Association, National Organization for Public Health Nursing, National League of Nursing Education—Biennial Nursing Convention. Atlantic City, N. J. September 23–26.

American Public Health Association—74th Annual Meeting. Headquarters—Public Auditorium, Cleveland, O. November 12–14.

Meetings of related organizations, November 11:

- American School Health Association
- American Social Hygiene Association
- Association of Maternal and Child Health Directors
- Association of Reserve Officers of the U. S. Public Health Service
- Conference of Municipal Public Health Engineers
- Conference of Professors of Preventive Medicine
- Conference of State Sanitary Engineers
- Conference of State and Provincial Public Health Laboratory Directors
- Council of State Directors of Public Health Nursing
- National Committee of Health Council Executives
- Public Health Cancer Association

American Public Works Association—Public Works Congress. Fort Worth, Tex. September 22–25.

American Water Works Association—Southeastern Section—DeSoto Hotel, Savannah, Ga. September 9–11.